

# Professional Amiga User

M A G A Z I N E

Volume 2 Number 5  
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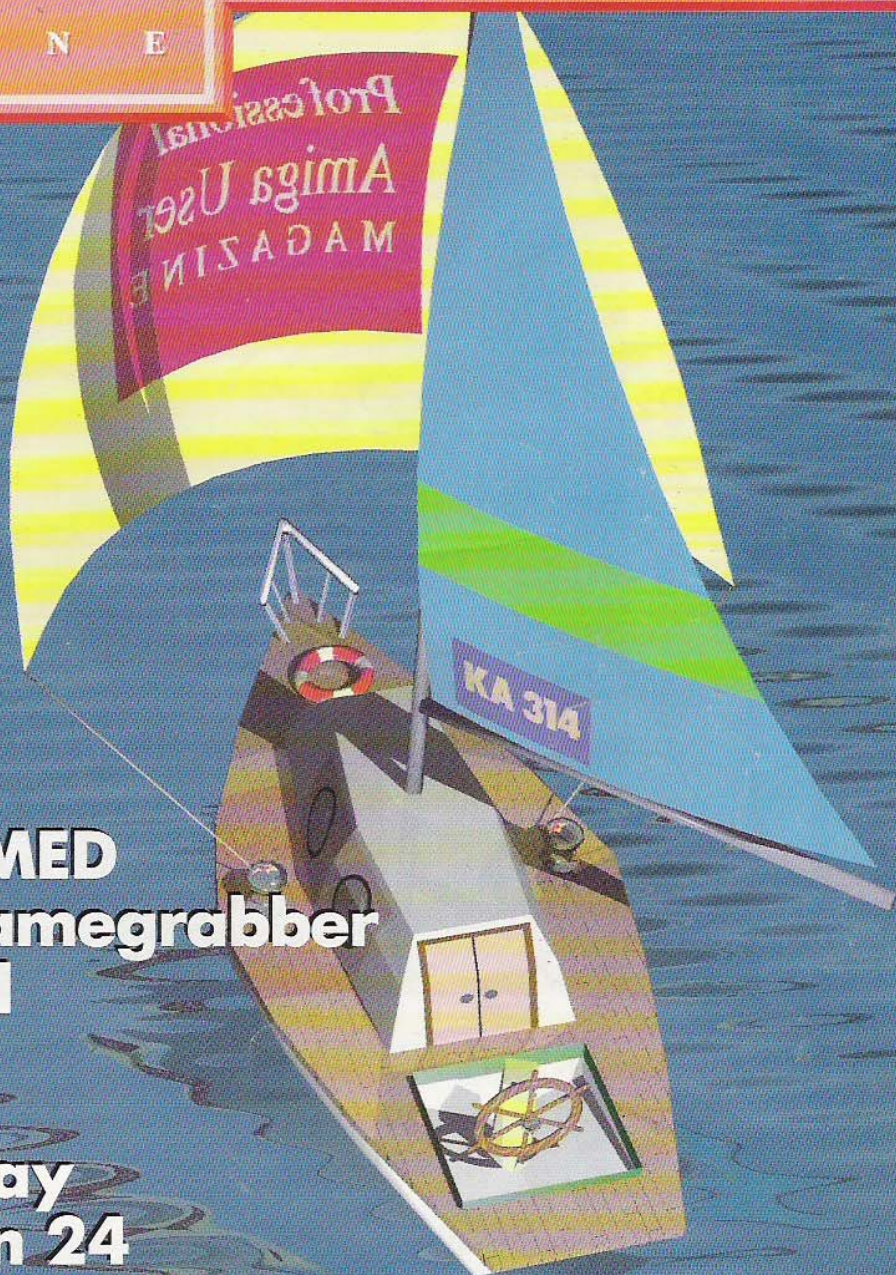
December/January 1992

## Wordworth verses ProWrite



Soundtracker vs MED  
VD2001 24-bit Framegrabber  
Miracle Keyboard

Preview:  
DCTV 24-bit Display  
GVP Impact Vision 24



Public Domain CAD • ATOncE Emulator

Vista: MakePath and TerraForm • Audio Engineer II

Neriki Y/C Genlock • Workbench 2.0 Tips

\* Recommended Retail Price Only



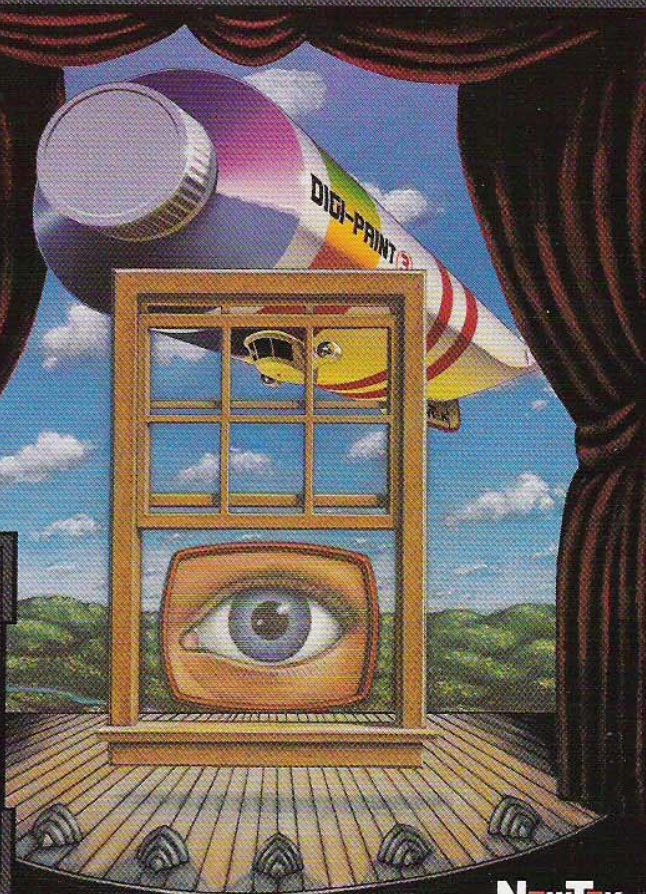
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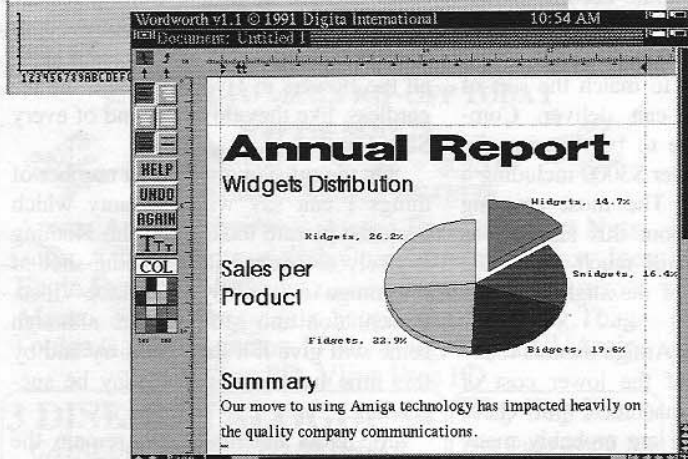
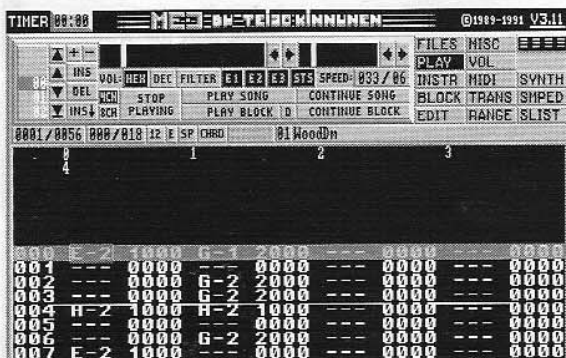
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using the Amiga.

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Ray traced in *Imagine* (1500 x 2000 pixels in 24-Bit). Split into two files and gamma corrected in *Art Department Professional*. Colour separated with *Professional Page 2.0*. Modelled and rendered by Peter J. Ward.  
Image size: 3.3 Mb Postscript size: 24.5 Mb



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# First Words

► Another late night, this time behind the keyboard of an IBM compatible 486 DX. A fast machine by any standards. At \$2500, this mighty power-house sure represents excellent value for money. However, I can't pretend to be even moderately impressed with *Windows*. Compared to Amiga's Workbench 2.04, *Windows* is counter-intuitive, cumbersome and worst of all, it's not really an operating system.

The point of this particular late night was to help a friend, Stuart Kennedy, who was writing a story for one of Australia's in-flight magazines. The story looked at how much computer you could buy for around \$2500 and then compared the contenders performances.

The machines at the starting line were an IBM PS/1, Apple Mac Classic, a 486-DX clone and the Amiga 2000HD. By the end of the evening, it was clear the DX represented best value for money from a purely academic comparison of bangs for bucks. The Amiga rated a distant second, with the Mac's monochrome Classic coming in third and the slow, but functional, IBM PS/1 crossing the line well behind the pack. Who cares for brand names these days?

Whilst there can be no doubt the Amiga is now better value than ever, and that the Amiga is umpteen times more fun than any PC you care to poke a stick at, there are some ominous looking clouds on the horizon. Amiga technology is fast becoming rather long in the tooth, PC technology is catching up, and although I don't believe they offer anything quite so elegant as a Mac or Amiga can, the indicators are that the PC makers will get it right very soon.

In essence, Commodore have allowed the Amiga to become uncompetitive. This fact was brought home to Irving Gould, Mr. Commodore himself, and Mehdi Ali, the man who runs the show, at a recent shareholders meeting. True to form, Commodore had nothing to say about rumours of new machines which will bring the Amiga back to the technological forefront. Amongst industry pundits, it is agreed by most that Amiga hardware is in desperate need of a serious upgrade, but there is little confidence of delivery happening in the near future.

At the moment, to match the sort of power a 386-DX can deliver, Commodore would have to be shipping the Amiga 3000 for under \$3000 including a multisync monitor. The most amazing and bizarre part about this situation is that many would still much prefer the Amiga, regardless of the slightly higher cost.

No doubt, many Amiga owners today were well aware of the lower cost of IBM compatible machines, but chose Amiga. Sadly, there are probably many consumers who, in these harder economic times, had neither the money nor the knowledge to be able to make anything but the MS-DOS choice.

Whispers about new machines are probably the last thing Commodore needs. No doubt they have plenty of older models to move. Maybe new machines are a year away. However, if some form of announcement is not made soon, with tongue firmly in cheek, I predict the following scenario:-

Some current owners will become disillusioned with the Amiga, sell-up and buy PC's; compatibles will continue to

make huge in-roads into the Amiga market; fewer new Amiga sales will be made, so the likelihood of Commodore clearing existing stock quickly will diminish; all the flowers in Hyde Park will die.

On the other hand, if Commodore do make an announcement:- some current owners will get tired of waiting, sell-up and buy PC's; compatibles will continue to make huge in-roads into the Amiga market; less new Amiga sales will be made because of people waiting for the new machines to arrive and Commodore will have trouble selling the old models; all the flowers in Hyde Park will die regardless, like they do at the end of every Summer.

On the up-side, there are a number of things I can say with certainty which keep the picture looking bright. Nothing is likely to come within a sling-shot of the Amiga in the areas of Desktop Video, Presentation and Multi-Media, although some will give it a darn good try and by this time next year a few may be succeeding.

MS-DOS machines will remain the less exciting choice for home use and people who own Amigas will continue to recommend to friends to buy one. Best of all, the Amiga 500 will continue to get cheaper, sell by the thousands and hopefully give Nintendo and Sega a kick on the pants, successfully repositioning Commodore to their former glory as king of the low-end market. For the Professional Amiga world, these events will be enough to keep serious Amiga computing fueled long enough for whatever Commodore has in store.

- Andrew Farrell  
Editor





## Brief Bits

- Word Perfect has officially dumped the Amiga line.
- Oxix now has control of Precision's SuperBase / Plan software.
- Vortex ahas announced an 80386 based ATOnce emulator.
- A third-party is said to be showing a portable Amiga at the World of Commodore in Toronto, December 6-7-8.
- Commodore now has an AmigaVision runtime player - with a catch.
- CDTV add-ons will ship this month.
- A690s are now in production.

## Amiga Portable Hopes Brighten

► Newer Technology has announced the development of a new, true portable, Amiga computer. Based on the Motorola 68000 processor running at 7.16MHz, the Model 10 is 100% software compatible and available with the 1.3 or 2.0 Commodore ROMs. A monochrome LCD display is standard and a colour LCD will be available soon. The model 10 was displayed at the next World of Commodore show in Toronto, during December 1991.

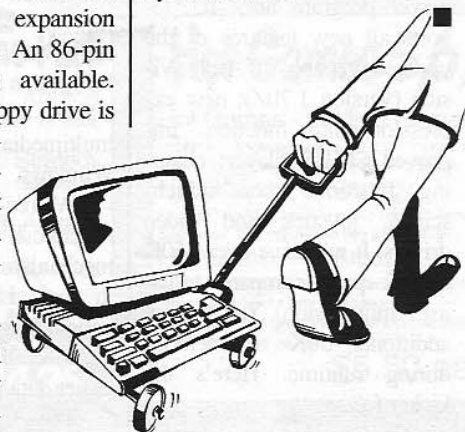
A second 24MHz 68030 portable - the Model 30 - with an optional 68882 math co-processor, is currently under development but will not be officially announced until January 1992. The Model 30 Amiga portable is the ideal platform for software developers, graphics applications,

video, animation, CDTV, audio/MIDI users and AmigaVision users.

The completely new design of Model 10 is compact: 2" tall, 11.7" wide and 8.3" deep when closed and weighs from three to six pounds depending upon configuration. It features 2MB of internal memory soldered onto the motherboard with expansion to up to 8MB total. An 86-pin expansion bus is available. One 3.5" 880K floppy drive is also standard. Battery power is completely dependent upon configuration and attached peripherals.

Available peripherals from Newer Technology will include an external 40MB hard

disk, an internal 20MB hard disk, RAM upgrades to 8MB, battery charger and a PC hardware upgrade. Projected peripherals include a CD-ROM drive, sound output interface, SCSI II Dart RAM drive, external tape drive and an external colour display. Pricing and availability will be available by our next issue.



## QuarterBack Upgrade

► Central Coast Software has announced a new version of *Quarterback*. Version 5.0 adds several new features and enhancements, including; integrated streaming tape support; compression; backup and restore to a file; password protection and encryption; new "3-D" user interface; increased performance; AREXX and Workbench 2.0 support.

Several other improvements have been made to *Quarterback*, such as support for up to four floppy drives, increased file selection versatility, and more. *Quarterback 5.0* will be available early 1992, and will have a suggested retail price of \$109.95. For more information contact Computermate on (02) 457 8388 or Dataflow on (02) 331 6153. ■

## Wordperfect Dumps Amiga

► It's official. Wordperfect Corp. has officially stopped development on any future Amiga versions of its popular word processing software.

Wordperfect claims that the Amiga market cannot generate the revenue necessary to justify a full-fledged development effort. WordPerfect will still support the current version (4.1.12) with toll-free technical support and maintenance up-

grades/fixes.

Reactions in the Amiga community range from shock to fatalistic acceptance to joyous celebration. General sentiment seems to be that while the credibility the Wordperfect name lends to the Amiga platform is nice, if 4.1 was an indication of their best shot at Amiga programming, it is better that they got out of the market. ■





## AmigaVision Run-Time Player

► CATS have announced the availability of an AmigaVision runtime player program. This player is basically AmigaVision without its icon-based editor. You can include the runtime player with your own AV applications so that your users don't need to own AmigaVision in order to run your software.

Other advantages of the player program are:- It supports all new features of the updated version of AmigaVision (version 1.70Z); new expression editor functions; improved SMUS player; chaining function; more touch-screen, joystick and video drivers. It will save over 350K of disk space (compared to using AmigaVision). You save an additional 50K of memory during runtime. Here's the kicker folks:

The licensing terms consist of a yearly registration fee (US\$500 the first year, US\$100 each year after) and a per-copy fee (on a sliding scale, based on the retail price of your product). If you are interested in licensing this program from CBM, send a letter to:

*Software Support  
Commodore Business  
Machines  
67 Mars Road,  
Lane Cove 2066*

# Multimedia Shootout at COMDEX

► PC Week Lab's Multi-Media Shoot-Out was held recently at Comdex. Three teams competed in creating a multimedia presentation over a three-day period.

The Microsoft/Asymetrix team was using Multi-Media Widgets, a feature of Toolbook 1.5 that takes advantage of the multimedia extensions for Windows.

Warren-Forthought on a Macintosh used a similar mechanism called GhostWriter in their Linx application to generate scripts. System 7 on the Mac allows file sharing for easier data manipulation.

The Commodore Amiga team was using AmigaVision and ARexx to author their presentation. [Ed. -- Chris Stetson of Ziff-Davis referred to AV as "intuitive to understand" and "graphical authoring a step-further".]

The second day of the Multi-Media Shoot-Out saw the completion of the interactive portion of the Global Warming presentation for Greenpeace. Microsoft/Asymetrix, Warren-Forthought on the Macintosh and the Commodore team on the Amiga all finished the basic screens and links for the four interactive sections.

Once the screens are spruced up and graphics and video are edited, the teams will be incorporating the sound elements. The navigation tools are mostly focused on buttons to hyper-move users from screen to screen.

The Microsoft/Asymetrix team created a text search engine to allow users to look up instances of a topic. If a user wants to see all of the data on clouds, they simply type in "clouds" for a list of all screens associated with this word.

The Warren-Forthought Linx team began adding clips from their sound libraries and began the introductory portion of the Greenpeace multi-media presentation. Interestingly, Linx allows the use of multiple monitors for presentation display. They use the Macintosh Quickdraw API to send images to various monitors independently of one another.

The Commodore team has all but finished the interactive portion of the presentation and is beginning work on the introduction/overview. They have begun rendering 3-D images to add spacial effects to the presentation.

The third day saw the wrap-up and judging of the three finished products.

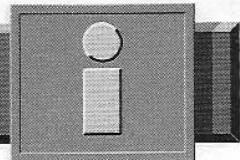
Microsoft/Asymetrix created a CO2 counter continually counting the amount of carbon dioxide being pumped into the atmosphere every second. The last reading was 23.5 metric tons per second. The team's introduction uses a rendered globe inviting users to learn more about the problems that our planet is facing.

Warren-Forthought added a series of Macromind Director animations showing rotating greenhouse gas molecules. The team also spent an hour early in the morning adding sound to the interface to help users navigate through the system.

Finally, the Commodore team finished a series of rendered images, adding these 3-D animations to text animations for a compelling beginning to their presentation.

The developer judges spent one and a half hours with the participants to determine the usability, flexibility and integration features of the authoring platforms. The wide variety of approaches taken by the different systems gave them difficulty in comparing, but ease in contrasting the systems for multimedia development.





## SID 2.0

Oh where are you?

► News of the improved *SID*, version 2.0, has been floating around for some months. We've even downloaded a copy which doesn't appear to work. So where is the real finished version? According to a recent electronic mail, the author has been very sick, something which at first slowed development.

However, like many good software packages, during a long stint of indoor recovery, the program has moved far closer to completion with many of the bugs reported by Beta testers being completely fixed. Final distribution arrangements and pricing are yet to be announced, so stay tuned. If you haven't registered your old version yet, now may be the time to do so.

## CDTV/P Add On Kit

► Commodore is said to be readying the CDTV/P add-on kit for CDTV players. The kit contains a keyboard, mouse and floppy disk drive. The CDTV/P add-on kit is being billed as a kit that will turn a consumer-electronics product (CDTV) into a full-fledged computer. Local sources say the kit should be available in Australia around March. Perhaps our units are being sent by ship? With the Australia dollar in a state of flux, no pricing was available at press time.

# Oxxi Picks Up Precision

► U.S. software company, Oxxi/Aegis, has purchased the rights to the Amiga line of Precision/SPC products, including SuperBase Professional 4. According to SPC sources, an agreement has been made between Oxxi and SPC to allow parallel development of SuperBase Windows [SPC] and SuperBase Amiga [Oxxi]. It is interesting to note that Precision was said to be working on a network-compatible version of SBProA when they were purchased by SPC. The network version was supposed to support Novell Netware networks, like the Windows version does. The interesting part is that Oxxi is the company han-

dling the software part of Novell Netware for the Amiga. At least it's in good hands.

The acquisition is the fourth in two years for the Long Beach-based software/hardware publishing house, which purchased Glacier Technologies, PAR Software and the product line of Aegis Development in 1989.

The Precision deal adds Amiga Superbase 4, Superbase Personal and Superbase Professional to the Oxxi product line, as well as Superplan (formerly Logistix) and other productivity software.

With the release of Oxxi's Amiga Client Software, Amiga computers can share data with

PC computers directly on a Novell NetWare network. The Superbase product is seen as a strong contribution to the network compatibility.

Technical support for the Superbase product has been transferred to Oxxi in California. Eligibility for upgrades and technical support will have to be established by registration. Although local distribution of Oxxi products is uncertain, most of their range is available through major distributors. It is uncertain if we will ever see the Novell Client package in Australia. For more information call Computermate on (02) 457 8388.

# Ambassador for BridgeBoard

► Consultron will soon release a new product for BridgeBoard users called *Ambassador*. They indicated that the product should be available sometime in January. Of interest to A3000 Bridgeboard users, they said they are struggling with having their product allow booting the bridgeboard from an Amiga drive. The problem they are having is that a new version of the Janus software is expected from CBM *Real Soon Now* and they don't know if that would break

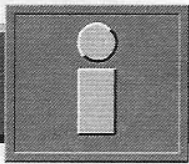
their software's ability to offer this booting feature.

Consultron is quite aware that A3000 users have to do a bit of hacking with drives to fit their computers with BB's, so they are taking this feature very seriously.

As far as upgrades go, *Cross-Dos* users will probably be able to upgrade for the difference between *Cross-Dos* and *Ambassador*. Features include: directly access the Amiga-connected floppy drives as MS-DOS drives from

within most MS-DOS programs; receive up to a 100 times speed increase when using our version of the PC virtual hard drive partitions from the Amiga; access MS-DOS formatted media using the same features as *CrossDos*; access BridgeBoard created virtual hard drive partitions (such as MakeAB and JLink files). For more information call Computermate on (02) 457 8388





# Click Here First

# PREVIEW: Impact Vision 24

*If you're looking for more than plain-Jane 24-bit, GVP's Impact Vision board has plenty of extras packed in as Charles Hill writes.*

► Great Valley Products' Impact Vision 24 (IV24) board is a dual-slot expansion board for the A3000 or A2000 series of computers. It is designed to provide 12 or 24 bits of colour information to an Amiga screen; 12 bit, non-HAM, live picture-in-picture (PIP) and either 12 bit or 24 bit real time framegrabbing from a separated RGB video source.

## Hardware

The IV24 package comes in two versions: A2000 and A3000. The A2000 package includes an extra cable to hook the board up to the A2000's video slot. Both versions include the IV24 internal expansion card and a multi-function cable. The IV24 card is designed to fit in the A3000's Zorro/Video inline slots. The two card-edge connectors look similar to an ISA-AT style card, though much larger. Beta test boards had visible jumpers on the back of the card and came without an end brace to

screw down to the machine, but final release boards had no jumpers and the proper end brace.

Writing on the board says: "Great Valley Products Amiga 3000/PVA Revision IV". The board has a very polished look. It is a finished product.

The end of the board has a 31 KHz output port, a multi-input port and a three position switch. The 31 KHz output port can be software switched down to 15 KHz and is designed to hook to your monitor. The IV24 board has the ability, unlike Commodore's flicker-unit, to deinterlace/scan double 15 KHz output.

The multi-input plug hooks up to a special cable supplied with the board and provides four input connectors and two output connectors. On the input side, there is separated Red, Green, Blue and composite RCA-style plugs. For output, there is an S-VHS connector and an RCA-style composite out plug. This

combination allows for output to a composite destination (television, VCR, etc.), an S-VHS receiver (television, VCR, etc.) or RGB (monitor, film recorder, etc.) - I had no occasion to test the composite or S-VHS output.

## Installation

The IV24 card is designed to fit in the A3000's inline Zorro/Video slot (topmost slot). A connector cable and adaptor plug is provided for A2000 owners. The card slides in and screws down smoothly in an A3000. It is a tight fit, but from what I understand all A3000 cards are a tight fit. On an A2000 there is a bit more work.

The A2000 model plugs into a Zorro slot and then a cable is run from a special connector on the board over to the video slot. The manual recommends running the cable over the power supply until the card burns itself in, then reinstalling it by running the cable

under the power cage. To do this, you must physically remove the power cage. This is not an experience for the squeamish or for those with machines still covered by a warranty.

## Software

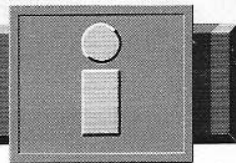
GVP, while selling the unit, claims that the software is all gamma release and still being worked on. That is an understatement. The IV24 package includes three commercial software packages: *Scala*, *Caligari* and *MacroPaint*; and a host of IV24 utilities: IVPIP, IVCP, IVGRAB, IVVIEW, IVREAD and IVCMD.

The three commercial programs are all versions designed to support the IV24 board. Of the three, *Caligari* is the most finished product.

## Macropaint

*MacroPaint* requires 5 Mb of RAM to run, and it will crash and burn if you have less. *MacroPaint* is also the





most bug-ridden of the three packages. The manual has a nice large "Preliminary GAMMA" stamp on it, and they ain't kidding.

*MacroPaint's* biggest strength (besides being able to work on 24-bit pictures in real time) is its support for ARExx macros. *MacroPaint* can be controlled via ARExx and can send commands out via ARExx. This is very handy for those of us with hordes of memory and a program like *ADPro* sitting in the background.

The memory used for the images in *MacroPaint* must be contiguous. If you want to load a 1.2 meg image, you must have 1.2 megs of contiguous RAM.

In normal operations, I have *ADPro* running with a 1.75 meg buffer (to handle 24-bit pictures); DNet running (hooking my A2000 up to the A3000) and now *MacroPaint*.

Now, with *ADPro* taking two megs, *MacroPaint* taking five megs and a loaded picture taking another one, that is a total of eight megabytes of RAM in use already. What happens if you want to load in a second image or a full-screen brush? You run out of memory, even on a 10 megabyte A3000, that's what!

If you want to fully manipulate 24-bit images, get LOTS of RAM, then buy some more for extra measure. I recommend at least 10 megabytes for any multitasking while running *MacroPaint*. Having *MacroPaint* send an image to *ADPro* for manipulation and then getting it back is wonderful. With the requirements for contiguous memory, you need a lot of RAM to spare.

## Scala

In truth, I haven't used *Scala* very much. It looks like a smooth program, but it ships on a grand-total of one (I counted twice) disk for the IV-24. The regular version ships on 6 or 7 disks! Has GVP got some fantastic new compression method I'm unaware of? I don't know what's missing but then again I don't have the original version of *Scala* around. (A full review of *Scala* 2.0 will appear in early '92.)

## Caligari 2.0

I haven't played much with *Caligari*, either. It seems to be quite nice and I haven't been able to crash it. Unlike *Scala* and *MacroPaint*, *Caligari* doesn't multitask. Like *Scala*, there is no ARExx port. (*Scala* 1.1 has an AREXX port - Ed.) Some friends of mine purchased the IV24 board solely because it came with *Caligari*. They had been using *Caligari Broadcast* with a Bridgeboard and a Targa board and wanted to try it out. While they are impressed with the product, it isn't up to *Caligari Broadcast* standards. Considering the broadcast version is thousands of dollars itself, no one expected it to be.

*Caligari* requires an accelerated Amiga with a math coprocessor and at least 3 Mb of RAM to run. The faster the better, the more RAM the better.

*Caligari* does not do ray tracing, but renders in another fashion. Ray tracing takes longer, but yields better results. *Caligari* renders quicker and gives quite good results.

A full review of *Caligari* 2.0-24 will come at a later date. This program is big and

I'm not familiar enough with it to do it justice.

## IV24 Utilities

The IV24 utilities allow control over the PIP feature, image capture, output destination, input destination and board-level registers. Separated RGB input is necessary to do framegrabbing or PIP. Colour-splitters are available, but I used an RGB camera. A colour-splitter would be necessary to capture input from a composite source, such as a VCR. True RGB is cleaner and sharper, though.

The IV24 board will provide two banks of 12-bit RAM. This allows for double-buffered 12 bit (4096 colour) animations or a single-buffered 24 bit (16.7 million colour) image. 12 bit images are not HAM, but true 12 bit. PIP is 12 bit live video overlayed on a 12 bit Amiga screen. The screen can be swapped so that the live video is the background and the Amiga screen is in the PIP. The PIP can be resized, moved, zoomed and the scale changed. It can be turned on and off and all this can be done with a mouse, keyboard or via ARExx. The manual says the PIP can be framegrabbed, but so far this function does not work.

Full 24 bit images can be framegrabbed without any problem. The IV24 has three display modes: full Amiga graphics; keyed source and full external. Full Amiga graphics is just that - an Amiga display. Full external is a direct feed of the RGB signal so you can see what the camera is pointing at. Keyed images allow the external video to show through the background colour (genlocking) OR the live video to show

through every colour but the background.

Other software allows direct reads and writes from/to the boards own registers and memory; viewing of 24 bit or 12 bit pictures; and framegrabbing. Everything works to some extent. I cannot seem to get the PIP to load from a CLI without crashing, but it loads fine from the WorkBench (or the 2.0 wbstartup drawer). Some of the ARExx commands listed in the manual are not in the software, or are implemented differently than stated. I cannot get the default settings on Framegrabs to save properly, so I have to reset them every time I boot the machine (via ARExx). Framegrabbing PIP just plain doesn't work.

GVP is aware of the problems and has people working on them. (I know, I've called them enough times to get on a first-name basis with half of their staff!) The IV24 board is a great piece of hardware that has a lot of potential. Third party support is forthcoming (ASDG will support the IV24 in their next release of *ADPro* in November.) The board is a bit pricey, retailing for a tad over \$3,000 with another \$80 to \$100 for the A2000 adaptor.

Hopefully this will change soon. Chips & Technologies has introduced a new chip that handles full PIP in a computer. The chip is \$40 in quantity compared to \$200 - \$300 for the sets currently on the market. Don't expect cheap competitors until at least 1992, though. Watch for an in depth review once the software is finished. For more information contact Power Peripherals on (03) 532 8553.





# DCTV Preview

## 24 Bit Digitiser and Display

*At long last a PAL version of DCTV is shipping. Stephen G. Keumurian files this preview.*

► DCTV is one of the many new 24-bit display devices available for the Amiga, and appears to be a very promising addition to the Amiga video world. The whole DCTV package is composed of the DCTV hardware itself, a well documented manual, and four disks containing all the essential software to test and use DCTV.

The DCTV hardware attaches both to your 23-pin RGB video port and the parallel port of your Amiga. The manual states that parallel switch-boxes will work with DCTV. DCTV will work with all Amiga models with at least one megabyte of memory; however, there are a few minor differences between the machines that may require some attention.

I have noticed that there are two versions of DCTV; make sure that you buy the correct one depending on which model Amiga you have. The only difference between the two is the location of the composite output cable on the RGB connector.

For Amiga 1000 users, a standard 25-pin female to female gender changer is required to connect DCTV's connector to your A1000's parallel port. The manual also mentions the known problems with Commodore's 2090A hard drive controller and overscan displays.

After installing DCTV I viewed several sample pictures from one of the included disks. The images were vibrant, sharp, and indistinguishable from broadcast television. None of the all-so-familiar HAM fringes were present. A slight flicker was visible when viewing certain images, however it was not as annoying as the normal Amiga RGB hi-res flicker. The manual tells you everything

you need to know to use DCTV with ease. There are many tutorials included to familiarise yourself with each of the specialised DCTV programs. Each chapter is packed with information and tips on how to use your DCTV to its fullest potential.

The software designed for DCTV includes a digitising and processing program, a paint program, and a conversion program. All programs feature an easy to use graphical interface that resembles that of NewTek's DigiPaint.

### DCTV Digitise and Process

The Digitise and Process program allows you to use DCTV to capture broadcast quality images from a video camera, a VCR with a fairly decent still-frame/pause feature, a videodisc player, or other PAL compatible video output devices such as the Canon still video camera. The only problem I encountered while trying to digitise at first was that due to a rather abnormal switchbox setup on my machine I was unable to digitise a picture correctly.

After connecting shorter cables, and rearranging my setup a bit, I was able to digitise pictures from my video camera and VCR with absolutely no problems. The process section of the program allows you to adjust the colour saturation, tint, brightness, contrast, sharpness, and RGB levels of the captured picture. Each condition is controlled by a separate slider. You can adjust each slider both positively and negatively in very precise increments. The only complaint that I have about the whole digitising process with the DCTV software is that there is no way to specify how many colours you

wish to use in the picture before you digitise it.

The program defaults to full colour 24-bit digitising, and you must use another program that comes with the package to save it in another format, such as HAM or IFF.

Unfortunately, when you scale a 24-bit colour image down to even a HAM picture, you lose quite a bit of the picture quality because the palette contains many different colours that will disappear when you scale down to a lesser amount of colours.

The Paint program included is extremely easy to use. The program features brushes, clips, stencils, fonts, and much more. All of these features respond in mainly the same way as you would expect any paint program to. The only feature that may seem confusing at first is the font tool.

After you select a font, the style you wish to use and type the text that you want to be displayed in the font, the program will create a brush. It takes practice to master the part of text placement. To summarise it simply, you have to take the brush that was created with the font you chose, stamp it down on your spare page, create a stencil, and remove that specific area on the original page.

The Convert program is designed to load and convert DCTV to standard Amiga file formats. The program features controls to adjust the palette of a picture and to dither the picture. After adjusting the picture, you can then save it in IFF or HAM format suitable for normal Amiga viewing.

All in all I would say that DCTV is well worth the price for its display quality, ease of use, and ability to digitise 24-bit graphics. Although there may be features currently missing from the included programs, the company is working on many new and more powerful software packages for DCTV.

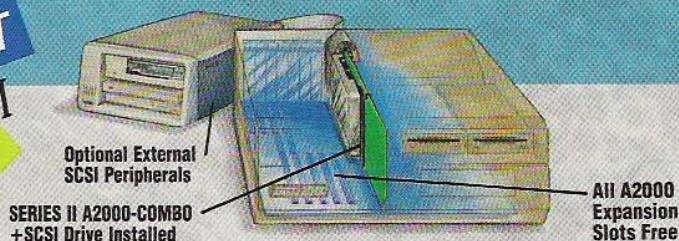
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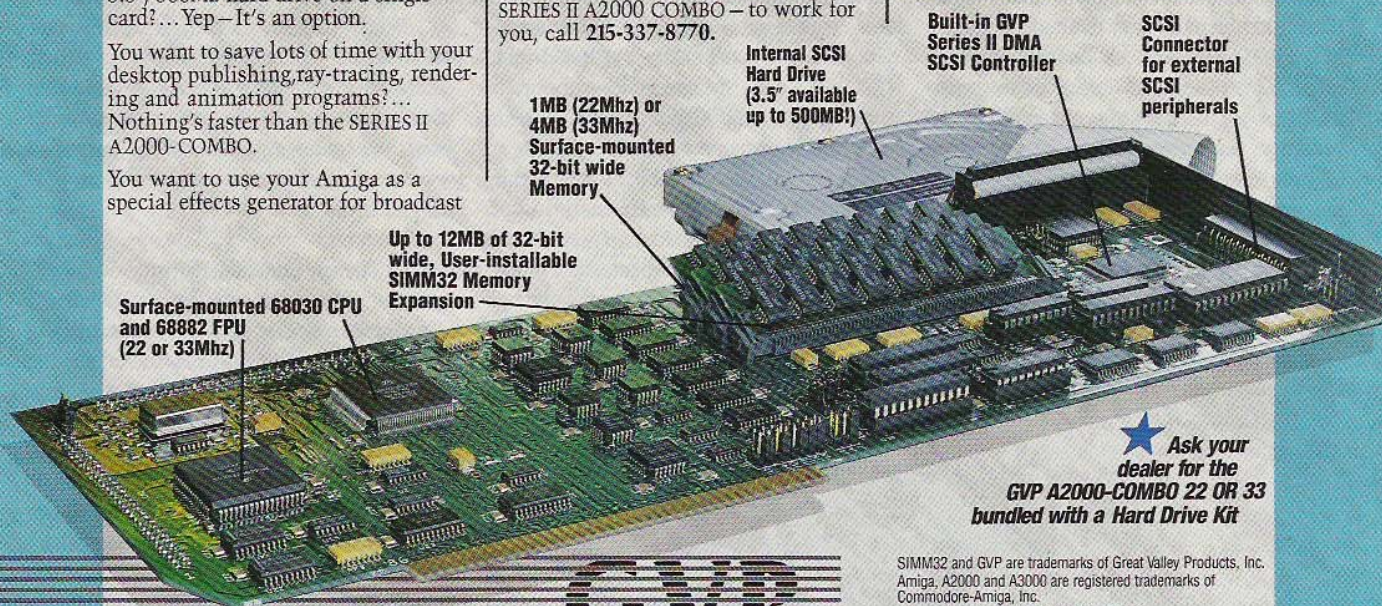
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# Audio Engineer II

## 'Sound Digitising In Style'

*One Australian product stands head and shoulders above all other world contenders. Audio Engineer remains the best sound sampler on the market - now they've made it even better as our resident sound boffin Daniel Rutter explains.*

► It has been accepted since this program's inception that *Audio Engineer* bridges the gap between the 16 bit audio boards and the common-as-muck brigade of cheaper 8-bit digitisers (*Perfect Sound*, *Pro Sound* and its precursor *AudioMaster*). The 16 bit models offer professional quality, with a professional price and use exotic file formats incompatible with many less exalted packages. More reasonably priced boards like Sunrize's 12 bit mono job are trundling over the horizon, but the software quality's reportedly pretty rosy and if you want compatibility with a vanilla Amiga you can go whistle.

When *Audio Engineer*'s most drastic previous rewrite first emerged (and Andrew Farrell reviewed it in the June 1990 edition of the Australian Commodore and

Amiga Review), its capabilities were in the process of doing the sorts of things to the Amiga audio community that one would normally expect from a small hydrogen bomb airburst over a 250ft termite mound. Everybody wanted one, and many got one, the richer punters opting to trade up from their more venerable sampling hardware (*Audio Engineer* software supports virtually any older sampler you care to name) to the proprietary GSOFT *Audio Imager*, with support for sampling to 56,000sps, mic and line inputs, analogue gain controls, DC bias adjust, general invulnerability to anything short of 240VAC and extremely low inherent noise levels. Alternatively there is now the slightly less spectacular Junior sampler.

The only *Audio Engineer* version

which didn't support all these samplers was the "plus" variant, which was bundled with the *Imager* at a discount.

This magnificent hardware has been changed not one whit in this latest incarnation of the system, and all the older samplers are still perfectly supported. The software, however, has been given a bit more than the steady improvement.

Peter Norman of RamScan Software talks about this in his covering letter; there are some new enhancements in there waiting for the unwary sampler with the audio equivalent of a sock full of wet sand. The new bits are, in no particular order:

### Four Times Oversampling

Just like cheaper CD players, *Audio Engineer* now employs the oversampling technique during playback to reduce the metallic distortion that comes with low rate sampling. Loss of frequency response is negligible, and the improvement, while not dumbfounding, is there and is noticeable. Note that this is NOT another obscure alteration of the IFF standard - absolutely no change is made to the stored data, only to the way in which it is processed on playback.

This feature renders the venerable Amiga audio filter functionally redundant - its sole purpose is to reduce aliasing rubbish, and this feature does it better. I was waiting for it to show up on a digitising package - after all, it is a solely





## Sound Sampling

software form of sound processing requiring no exotic hardware. Now wait for BitStream...

### Real Time Effects

There's a new real time effect on top of the old echo and flange (with which an ordinary electric organ tone from any synth can be transformed into a lethally accurate Hammond replica - crank the gain and poke the volume and Space Truckin' never sounded so good...). You can now do a real time pitch shift.

Pitch shifters for electric guitars are nothing new (a pedal job comes in at some \$350, plus power supply), but this does a job reasonably similar (background garbage isn't too bad), and it's turned off by holding the right mouse button, so making a new mouse cable with the right wires leading to a push-on/push-off foot-switch will give you a genuine recording tool, with flange and echo too (the pedals for which cost, respectively, \$175 and \$269 plus plug-pack; most of this is for things like memory chips, which the Amiga already has in profusion).

None of these effects are studio quality (I know, I use a Boss RE-1000 for my reverbs, 64K+ of 16 bit processing on board, read it and weep...), but they'll do in a pinch or for a demo tape, or of course, just for fooling about and amusing the kids. The only other drawback is that the effects can't be stacked, as they can when using pedals; there's something for the people at RamScan to work on for *Audio Engineer III*, along with a few new effects: feedback, equalisation, overdrive, octaving, tremolo/pan, chorus, compression...

### Digital filtering

This gives you a digital graphic equaliser, with which you can boost or cut bass, treble or midrange frequencies from 1 to 100%, in any combination, in a sample. Thus can you slice out subsonic garbage, make more prominent a voice or lead instrument, simulate a loudness control (with both bass and treble boost), or just crank up the bass of a sample to give a better performance for people still

struggling along with their monitor's speakers, or those silly little Commodore A10 things (which, I might add, are NOT, repeat NOT, very well magnetically shielded, and can hence wreck up your monitor. The damage is repairable, but annoying; keep 'em well clear or else!). I myself make do with 110 watts per channel and 15 inch bass drivers, if you must know.

### On Screen Calibration Marks

These grey markers can be set to display in time increments or in bytes - there aren't any numbers, just lines of different lengths at top and bottom of the display. OK, so they're not earthshaking, but every little bit helps.

### Progress metering

Anyone who's used a Mac will be familiar with its horizontal bar graphs to indicate how many files it's copied, how much it's calculated or how silly you look not owning a cheaper A3000. *Audio Engineer* uses a similar little gizmo whilst performing many of its more involved calculations, to give you some idea of where you stand. It also (quoting from the bumf here) "provides a friendly beep" upon completion. With friends like that... but it works, and allows you to be looking somewhere else and still know when whatever it is has finished.

### Brutally Swift Screen Updates

I still have a copy of the version of Pro Sound before the Gold edition (and a worthy program it is, too). When you tell this program to zoom in on a range, it slowly redraws the waveform from left to right. With *Audio Engineer*, it's just there. Zap. If you click and hold on the "Zoom" or "Tele" buttons, you scroll in or out on the sample with utterly fluid perfection, even on my elderly 68000 A500. It is classy.

The same delectably speedy redraw times apply when scrolling through a sample in zoom mode - gorgeous. It does, admittedly, get jerkier if whipped from one end to the other (whaddaya want from 7MHz?) or if scrolled whilst playing, but still. Yum.

### Optimised Echo, Mix and Ramp Functions

These have all been sped up to the borderline (hands up all those who see a passing similarity between this speed and the similar abilities of the PD *StarTrekker*? Hmmmm). Most satisfactory, for 68000 pilots who aren't keen on fourteen coffee breaks an hour.

### Keep function

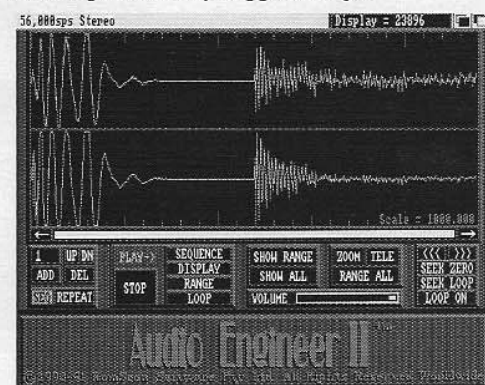
A simple idea. Select a range. Select Keep. Everything but that range now flaps off to Happy Island. Goodbye, unwanted dross, hello, spare RAM. A fairly obvious editing feature which was previously conspicuous by its absence.

### Auto hardware filter control

If you insist on seeing your power light at full brightness (or just on), *Audio Engineer* can be set to automatically turn it on for sounds around 5000sps or less (with Oversampling on), or 10000sps or less (with OS off).

### Software bias offset

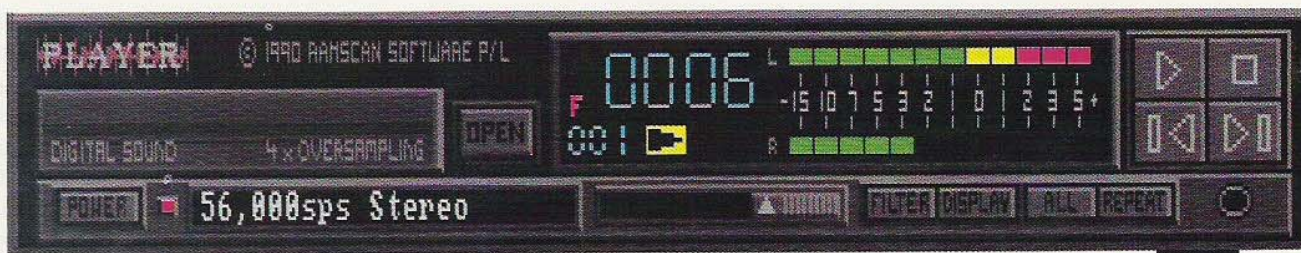
The Audio Imager features a hardware control for sampler bias (the output potential it defines as the zero line). Other samplers generally don't. If a sample has been made on another sampler, and thus left with a bias to + or -, this allows it to be universally pushed up or down on the display to level out its zilch line. This ensures the full -127 to +128 range is available, avoiding unfortunate clipping (squarewaving) on future processing. If the sample's already clipped, tough.



**Audio Engineer has a simple, easy-to-use interface**

*Professional Amiga User*





*Audio Engineer's CD player interface*

I heard some idiot say a while ago that a heavily biased sample could damage speakers - this is bunkum, as any audio amp automatically eliminates any significant DC component in its input, and any amp with bridging capacitors on its output stage (ie virtually anything ten or more years old, and anything well made thereafter) is physically incapable of outputting DC, even following a major internal failure. End of diatribe.

### Improved Support for PerfectSound3

Now the *PerfectSound3* sampler's volume can allegedly be adjusted using cursor keys instead of the RMB, along with automatic software adjust from pressing "a" whilst monitoring. I'll take their word for it, not having a PS3 digitiser to hand.

### Ancillary Programs

*CD Player* and *Playsound* are still there, except they both now support oversampling and *Playsound* now has more extensive command line options. The newcomer is called *Audio Disk Jockey*, and allows the loading of up to 180 samples (memory permitting) for playback with a mouse click. It has powerful grouping, editing and modifying features, and it, too, supports OS, and is perfect for radio use, presentations, frightening the cat... *MakeRaw*, *MakeStereo* and *AudioEngineerPatch* are unchanged, since they work. Fair enough.

### Pitch and Time Stretch/Compress

I saved the best 'till last. Anybody who listens to pop music, particularly house and rap, will notice that samples

are used a lot. A LARGE lot. There are now hundreds (!) of tunes which use a section out of James Brown's "Funky Drummer" backbeat as their rhythm line. But wouldn't they be nailed to a small spread of tempos, I hear you cry? Uh-uh. Because these people use very pricey professional consoles and heavy duty workstations to stretch, squeeze and pull samples about in such a way that the sound's pitch can be raised, while its tempo stays the same. Or tempo raised, and pitch dropped. Or total duration set to, say, ten seconds (tempo being nailed to this figure) and pitch lowered. Any combination of the above.

*Audio Engineer* can now do this. All together now - Wow!

The sound quality starts to get a little dodgy after extensive manipulation (the poor old 8 bit format starts to show cracks...), but it isn't actually much worse than that obtained from the huge and hairy pro units; partly because they're usually processing sounds that were analogue recorded a considerable while ago, I suppose.

The pitch and tempo modification feature will do many things. It's most useful for what I just described - tweaking samples to fit together. However, you can also record an answering machine message of, say, fourteen and a bit seconds, and crank it out to 20 to precisely fit the beep without sounding like the Thing From The Pit. Mind you, you've got to talk fast or you sound inebriated, but it's better than doing 153 takes. If you've an answering machine with a digitised outgoing message (very popular now), it might even be possible to rig a direct link, with maybe 10 different messages set up to tell callers where you are.

But if you try it and carbonise your entrails, don't come smoking to me.

With this feature you can also ease live playing with a sample backtrack, or learning riffs; there's a nifty pseudo-walkman for guitarists and keyboard players that allows the budding Satriani or Joel to play along to the masters at half speed but normal pitch - this goes one better, by allowing a digitised riff (and often you're just practising a few seconds at a time, so even a humble Imeg {or 512K!} machine will do) to be not just slowed down, but conveniently transposed as well. It's easier to play guitar in A; so be it; shazam! It's easier to play keyboard blues in C; no problem; presto! Get the picture?

Not to mention the endless possibilities for making Arnold Schwarzenegger sound like Mary Poppins, or Minnie Mouse like Jabba the Hutt. Silly but fun.

### Conclusions

All in all, *Audio Engineer II* is to sound digitising what DPIV is to graphics - not the be all and end all, but the best we've managed so far, and certainly the best to use common formats thus allowing portability without the need for \$2000 worth of esoteric hardware which most people don't want or need. I unreservedly recommend it to those who either don't want or can't afford the power and incompatibility of 16 or 12 bit boards, but want the sort of editing and manipulation features that go along with such monsters. It works, it works well, it's reasonably priced. If only all packages were this good.

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All photographs are of  
actual DCTV screens.



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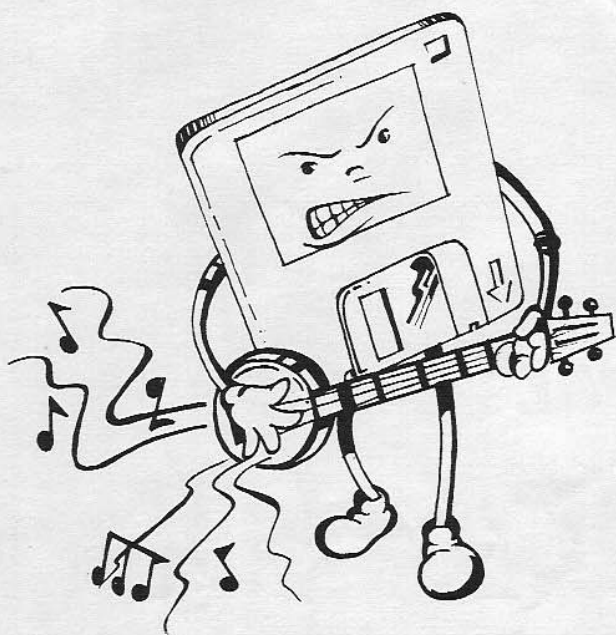
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# MED

## verses

*Sequencing up Amiga synthed music can be a lot of fun with the right program. Alex Van Starrex compares the two most popular choices.*

► The state of the music scene for the Amiga today is good reflection of the type of forces that have shaped the evolution of programming on the Amiga as a whole - never quite predictable, but always interesting.

Going back a few years to the heyday of the Amiga 1000 (and the emergence of the 500 and 2000), there were only two main music programs available for it - Sonix and the Deluxe Music Construction Set; both were commercial products and both relied upon conventional music notation to produce songs.

There was good reason behind the latter point - in order to become a respectable music computer, the Amiga had to be able to handle proper music. Besides, the machine was still too expensive to come within the affordable reach of young hackers, or independent programmers, to whom such conventions carried little if any weight. Nevertheless, a German programmer came up with a program called SoundTracker - one which, before it could be widely distributed, was both cracked and hacked, to become its famous PD equivalent.

In spite of some alarming discrepancies in the code, which made the program crash with great regularity, SoundTracker had one great thing going for it -

avoiding the pretence of using conventional notation and allowing users to sequence music directly. In order to prove its new musical worth, the now-legendary set of SoundTracker disks was released - complete with a bewildering array of both songs and sampled instruments. Most of the instruments were conveniently borrowed from digital synths, while the songs varied from barely worth listening to completely ridiculous - but a powerful musical tool (especially for non-musicians) was now in the hands of the general public, with little or no competition facing it.

### Commercial Offerings

Back in the land of commercial programs, things weren't going at all well - but with good reason. Sonix, with its limited notation but quite excellent instrument creation facilities, tended to suffer because of its 'poor man's musical tool' image. DMCS, on the other hand, ran the whole gamut of scoring facilities, but the program as a whole was sluggish and prone to crashing when handling large songs or instruments.

Neither could make much use of the SMUS player facility, which enabled songs to be played from Workbench or a CLI - DMCS songs, for example, re-



# Sound Tracker



quired many time-consuming adjustments for this to be possible (the songs played at a different speed, for a start).

Still, both of these programs have great potential. The music disks of Rob Baxter (currently riding high on the English PD charts with a version on Vivaldi's Four Seasons) are composed on Sonix, and show just how well classical music can be realised on a computer. *DMCS* is the real loser, though - with *Deluxe Paint* now in its fourth version, Electronic Arts seem content to peddle its musical equivalent unchanged, year in and year out. A thorough rewriting of its code is sorely needed or else the Amiga music scene may well slip into a quagmire of sequenced ignominy.

The only thing to have kept the conventional notation programs afloat over these past few years has, I believe, been the incompatibility of the various SoundTracker clones with America's NTSC screen configuration - which is a good reason to bring up the topic of *MED*, since, not only is it NTSC compatible, but the latest version, *OctaMED* 2.0, is a program that once more delves into the realms of conventional music notation.

## Music Editor

*MED*, the Music Editor, is the brain-

child of Finnish programmer Teijo Kinnunen. It made its first international appearance on Fish Disk #349, as version 1.12, where it quickly impressed users as a convenient and flexible music program - if a little short on features. In comparison to *SoundTracker* on which it was loosely based, it was more attractive and had a better interface (a problem that still haunts its more sophisticated but closely-modelled clones, such as *ProTracker*) - and it multitasked.

The great advantage to using *MED* was that songs could not only be playable from Workbench, but they could cycle endlessly - unlike *SMUS* songs, which played through once then fell silent. What this meant was that even short and simple songs could be instantly accessible, easily modifiable and endlessly cycled.

Furthermore, as both the songs and instruments were saved separately to disk, a large number of songs could be stored - provided that they used common instruments (in a similar fashion to *SMUS* songs).

Then the improvements in *MED* started appearing. The second version, appearing in the public domain as versions 2.00, 2.01 and 2.13, was quite a different kettle of fish to the original.

Paradoxically, the change that I disliked most at the time was the one which actually helped me the most to develop as a computer musician; the need to save the songs with their instruments in order for them to be playable from Workbench. By forcing me to use different instruments for different songs, it became natural to look for a different style and approach in each new song which I composed.

With version 3.00 came new MIDI functions, the ability to create and edit samples from within the program, a new "SynthSound" feature (whereby instruments are built-up from rudimentary sound waves) and much more. In fact there is so much now to *MED* that its instructions are a whopping 72k of data.

But there's no denying that *MED*, currently in its version 3.11b, is still an attractive, convenient and easy-to-use program. It has also spawned an eight channel commercial variant, *OctaMED* (currently only available from its English distributors, "AmigaNuts"), I'll mention more about eight channel programming at the end of this article.

## SoundTracker Clones

Needless to say, the *SoundTracker* camp hasn't been particularly quiet, a host of clones have appeared recently, of





which the best version by far is *ProTracker* (or PT, for short). This is the program which has been used by the Crusaders, whose music disks now practically dominate the English PD market. PT has an almost incomprehensible array of tools, many of which parallel those of *MED* - though, in a wise move, all its instructions are accessible on-screen, by pressing the 'Help' key.

Although its basic functions are still linked to the quite convoluted SoundTracker song construction format, it is streets ahead of any other clone - and is now the benchmark by which such programs should be judged.

So how do these two gladiators of the PD scene shape-up? Surprisingly close, in fact - considering how *MED* wipes the floor with the ordinary or basic SoundTracker program. For reasons which I'll go into later, I won't say that one is better than the other - it depends on what use you want to put the program to (and, of course, there's nothing to stop you getting both of them). I've also included details about *SoundTracker* (ST, as its noted), since *ProTracker's* functions tend to be exceptions to the rules for this type of program and *OctaMED* - which, though it is an exciting and quite innovative program in its own right, still has a number of restrictions when operating in eight channel mode.

Here's a blow-by-blow description of their functions:

### Operation

**ST:** This program 'breaks into' its main-screen, by way of a request-window opening from Workbench. Once inside, the user can only exit from it by resetting the computer (Control-A-A).

**PT:** Users can enter into the program from Workbench and exit back to it - however this isn't true multitasking, since Workbench can't be toggled, unless you invoke a DOS-command from within PT such as "NewShell" (it has the capacity to store 8 such commands within its configuration).

**MED:** Fully multitasking: the user can click the top right-hand screen gadget or drag the program's window to return to Workbench while in operation, and can exit back to Workbench with no trouble. *OctaMED* makes large demands on 68000 machines, though its problems tend to only be encountered when playing-back songs in Workbench.

### Interface

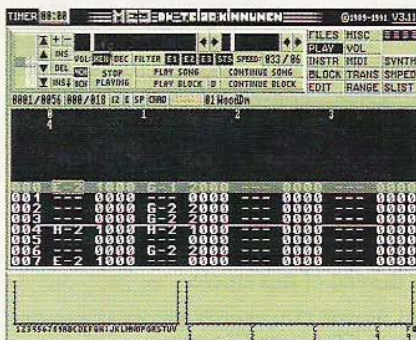
**ST:** Packs as much as possible onto the main screen, though with separate sub-screens for accessing disk-related activities and the obligatory 'preset-editor' (from which instrument-samples are called). A handful of commands can be invoked through keyboard shortcuts. There is only one program colour scheme (a drab grey and red affair), though it has two types of graphic equalisers (actually displaying channel and note activation only).

**PT:** This looks superficially identical

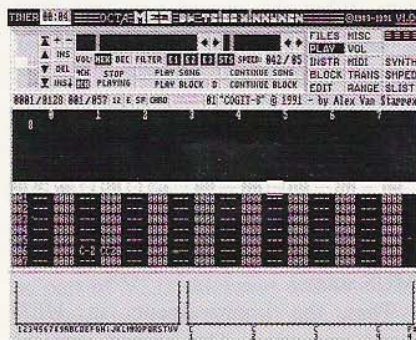
to its ST-base, however it has a number of enhancements. There are several sub-screens (which like ST's, cover the top half of the screen, leaving the note-sequences visible), which enable the extra command options to be accessed. Between these and the bewildering array of keyboard shortcuts (almost every variation of Shift, Alt, Control-key, Function-key, numeric-keypad and ordinary keys that you could imagine), PT can do quite a lot. A real bonus for program is the built-in guide to the program - using the 'Help' and cursor-keys, you can move between 120 well laid-out sub-screens, which tell you everything you need to know about the program. It can also save up to 256 sets of user-configurations, which load things such as colour schemes, function-key set-ups and keyboard-splits.

**MED:** Has a series of ten basic sub-screens laid-out in a much more logical and easier-to-access way. There are also additional sub-screens which cover the bottom-part of the screen, where functions such as the sample editor are accessed - and a host of keyboard-shortcuts. Since there is much more space given to the note sequences on MED's screen, this makes it easier to work on songs.

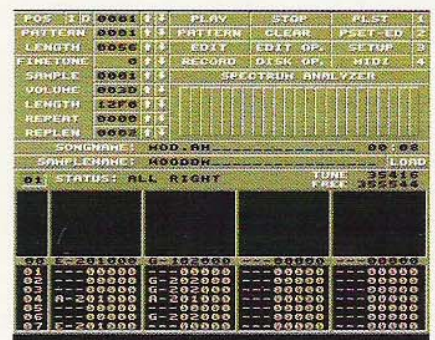
There are four types of additional graphic displays invoked when the music is playing - these can be switched-off and are disabled in *OctaMED's* eight channel configuration, the most interesting being an oscilloscope-reading of sound infor-



MED



OctoMED



ProTracker





mation in each channel. Each song can be saved with its own colour-scheme, including those for the subsidiary equalisers.

### Songs

**ST:** Loads ST-format songs, in either song-form or modules - the former type requiring instruments to be loaded separately through a requester window showing in Workbench. *MED* songs cannot be loaded. Some incompatibility exists between songs created and played on different ST-versions, while songs can be saved in 'song' or 'module' (with instruments) format.

**PT:** Operates in basically the same way as ST. There is an option for songs to be compressed, and a facility which allows songs to be printed-out.

**MED:** Loads *MED*-songs, *MED* 'song+sample' files (similar in concept to modules in ST-form), ST-modules and some ST-songs (depending upon which version of ST was used to create them). Later *MED* versions loads songs created on all previous versions of *MED*, though the reverse doesn't necessarily apply, due to some major revisions in the program. Songs can be saved in 'song' format, 'song+sample' format, ST-module format, or any of a series of special formats e.g. for use in programs. MIDI-files can be used, in keeping with the program's MIDI-capabilities.

Unfortunately, *MED* has trouble saving songs in ST-format - in a batch of around 60 songs which I once converted, only 12 were playable by ST; this means that if you want to specially create ST-songs for other reasons - such as to use with Red Sector's *DemoMaker* program, you are better off using PT or ST. Anyone wishing to convert songs between these two formats should also note that, as well accounting for the differences in the song-tempo and block-length, some re-writing may be required in relation to note-volume, pitch-bends and some effects.

*OctaMED* effectively splits each channel in half, in order to produce two channels' worth of information through each. As a result of this, the volume of

each half-channel is reduced and sound quality somewhat deteriorates, though not substantially.

### Song Files

**ST:** Uses blocks of 64 lines, arranged and repeated as necessary to form songs. By using jump commands within sequences, virtual blocks of lesser duration can be achieved. Songs can use up to 31 instruments (16 for earlier versions of ST). There are around 16 tempos that ST music can be created in, of which only 3 or 4 are actually useful and this explains the similar style of many SoundTracker songs.

**PT:** Song file are treated the same as SoundTracker.

**MED:** Med treats song file in a similar fashion to *SoundTracker*, however blocks can be from 1 to 256 lines in length, and *MED* has a huge range of conventional tempos (which is ideal for the serious composer, or for producing close 'covers' of popular songs) - but eight channel songs in *OctaMED* are restricted to using the ST-tempos. Up to 63 instruments can be used at a time. *MED* also compresses its songs, when saving to disk, so that the file size of a *MED* song will be smaller than its ST equivalent.

### Instruments

**ST:** SoundTracker uses single octave IFF compatible (8SVX) files, which are playable over a range of 3 octaves. Two of these can be played, monophonically, at a time on the Amiga-keyboard, switchable by using the F1 and F2 keys. Other types of instruments i.e. DMCS, which are made up of multiple-samples, playable over a 5-octave range, Sonix, which contain both samples and subsidiary information, can't be used by ST, unless you modify these by using a program such as *AudioMaster*. There is also an incompatibility problem between some newer and older versions of ST, with songs using looping instruments.

**PT:** Can use only the same instruments as ST, though there are extensive facilities for modifying these in the program. There is a 'multi' option which al-

lows samples to be played polyphonically on the keyboard and a user configurable 'keyboard-split' whereby up to four instruments can be played on the keyboard at a time - though music can still only be "recorded" one note at a time.

**MED:** In versions 2.00 and upwards, this can use all IFF/8SVX files as well as DMCS type instruments, playable over their full five octaves (though I've experienced problems with some DMCS files). There are no major restrictions to file size, either, so that quite lengthy samples can be taken from real recordings, such as dance-tracks, and re-mixed in *MED*, or massive grand piano music can be churned out on it.

Versions 3.00 and upwards allow the use of the SynthSounds which I mentioned earlier - since these sounds are generated by the computer, they can sustain indefinitely without looping, and avoid the changes in speed that can detract from samples being used over a wide range. These versions also contain sample creation, provided that you have the right hardware, and modification facilities. I've found the latter to be especially useful for altering instruments within a particular song. SynthSounds can't be used in the eight channel mode of *OctaMED*.

*OctaMED* and later version of *MED* have a chord option which allows notes to be both played and recorded polyphonically - the latter is useful for getting chord progressions down, though, due to inevitable quantizing errors, its use is rather limited for live sequencing and music may occasionally have to be corrected. *OctaMED* won't allow notes to be entered while the music is playing, which tends to inhibit the song creation process of 'jamming' to the music.

### Note Editing

**ST:** Users of ST and *MED* should be quite familiar with the basic arpeggio, portamento (pitch-sliding), vibrato, volume-slides and so on.

**PT:** Adds to the ST commands by including note delays and re-triggering, as well as combinations of effects (e.g.





combined pitch and volume changes) and more subtle variations.

**MED:** Contains many of the enhanced editing features of **PT**, plus a few of its own - the differences are many but minor. *OctaMED* is identical to its four channel equivalent, though it should be noted that activation and changes in volume of notes in the first four channels will affect the sound in the corresponding channel of the second set.

#### MIDI

**ST:** *SoundTracker* has no MIDI facilities.

**PT:** My version of **PT** (v1.0b) has very few MIDI options - a situation which is promised to improve with later versions. At the moment, such operations appear limited to playing/recording and stopping the entry of notes in songs, plus providing channel up/down information. Some of the newest **ST**-clones have improved on this.

**MED:** Comes into its own in this department. *MED* can output notes and many commands to MIDI devices - in up to 16 channels and can actively sense incoming information, send synchronisation signals and read pitchbends, volume changes and other remote commands.

#### Players

**ST:** Has a 'play' program, by which songs can be played from CLI commands - though public domain players such as *IntuiTracker* make the playback of **ST** modules much easier and more visually impressive. Of course, **ST** has made its name through the various demos and commercial games which use its scores - and it is one of the few types of music files which the *Red Sector Demo-Maker* recognises.

Besides *IntuiTracker*, there are a number of other player programs available for **ST** music, including multi-players which not only play a variety of different file types including *MED*, but have a number of different playback options. Some can even display pictures at the same time.

**PT:** I haven't heard of any compatibility problems between **PT** songs and

the programs which can play **ST** songs, so everything that I mentioned for **ST** applies here as well, though **PT** has now replaced **ST** as the program of choice for European composers.

**MED:** Has a *MEDPlayer*, allowing the Workbench playback of songs created in 'Song+sample' format or MIDI files and a *MODPlayer* for special *MED* modules. *MED* songs have just started to appear in games and demos, however, and its popularity with Amiga owners may depend on such use increasing. *OctaMED* has its own *OctaMEDPlayer* with others appearing in the public domain, but the processor-demands of eight channel music have serious effects on the multitasking operations of Workbench for 68000 machines - disk and file-accessing is reduced to a crawl, such that it may be necessary to halt the songs temporarily when carrying-out such operations.

#### Conclusion

That basically wraps-up the comparison, though there are a few other things worth mentioning at this point. I haven't drawn any conclusions as to which is the better program - I still prefer using *MED*, or *OctaMED* as it has grown into, as the process of creating songs with it is much more intuitive and visually responsive. *ProTracker*, on the other hand reminds me of *Microsoft Word* - it's powerful, but most of its features are hidden away and not readily apparent, thus requiring a protracted learning-curve.

If you want to create music for games and demos - we certainly don't need any more collections of modules in the public domain - then use *ProTracker*. It will have everything you want (and a whole lot more), but your music won't set the world alight, because there are just too many limitations in its basic song-format.

*MED* is more flexible - something reflected in the less-stereotypical music being produced with it. It's also a more internationally accepted program, due to its NTSC compatibility. The popularity of any program goes hand-in-hand with that of the work which is possible with it - a matter I take for granted now, since my

most recent music disk, the *Art of MED*, is now being widely distributed in America, Australia, England, Europe and Japan.

Is either of these two types of programs the ultimate in Amiga music production? Not by a long shot. *MED* music really isn't much better than its **ST** equivalent, for, even if it sounds more natural, it is still produced in the same endlessly repetitive method that results in sequenced sound. We need to return to properly scored music (with some digital improvements hopefully), in order to find music that breathes and develops emotional force - only rests, bar-construction and time-signatures can provide this. On the instrument-side, programs such as *Mugician* point the way towards further development.

Eight channel composition provides greater facilities, but at the expense of both functionality and flexibility. Nevertheless, *OctaMED* seems to be the best of the current eight channel programs, and I, for one, find it very difficult to go back to making or listening to four channel music after having used it for some months now. MIDI undoubtedly corrects many of the faults of such lesser means of music production, but, short of using it to make records, its influence won't affect the vast majority of Amiga-users.

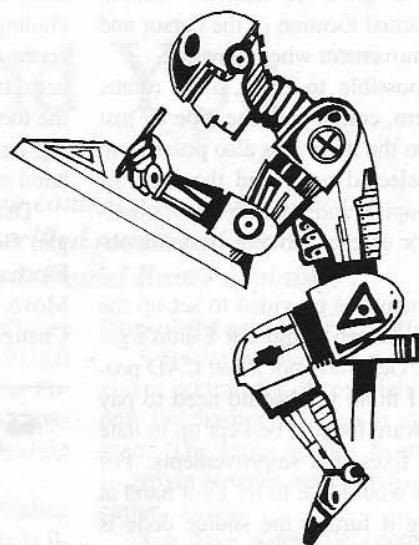
And where do we go from here? We'll just have to wait and see what the future holds.

*SoundTracker*, *MED* and are available from many Public Domain suppliers including Prime Artifax on (02) 879 7455 and *OctaMED* available from Megadisc on (02) 959 3692





# Public Domain CAD



*Computer Aided Design, or CAD, is normally thought of as the domain of heavy weight commercial programs. Amazingly, even public domain offerings provide reasonable power as George Kimpton writes.*

► My job of comparing public domain CAD programs was made easy thanks to a compilation put together by PAM's editor, Andrew Farrell. The CAD theme disk available through Prime Artifax includes four programs:- *LogicLab*, *MCad*, *Plan* and *Landscape*. Each is accompanied by reasonably comprehensive documents - which you can easily print out or view on-screen - to help you set them up and get them running.

## LogicLab

This program is for those with tidy minds who love to delve into that strange and sometimes incomprehensible world of circuit logic. It provides a working field on which you are allowed to set up various logic scenarios using AND, OR, XOR and NOT gates along with Flip Flops, Timers and Counters in various configurations. The logic array will hold up to seven rows of eleven elements.

The various logic elements are provided as icons which are pulled down to a suitable place on the screen with the mouse. Once in place, it is possible to select appropriate inputs and outputs and have the computer join them. Once the

logic paths have been set up you can then flip the input logic state with a click of the mouse and observe the effect of such a happening on the output in real time.

In the RUN mode it is possible to open a window on a logic element which will display the element's state versus time for inputs and outputs. Ten sample projects are provided to demonstrate the use of this program. Completed logic circuits can be printed out or stored for later access or use.

This is shareware and source code is available for those who would like to delve further into the wonders of logic. This could be a useful tool for some but has one flaw as far as I can see. The placing of the elements is locked to a very coarse grid. Without a better graduated grid one is limited in the placing of the elements. Consequently the connections between elements can overlap visually sometimes creating some confusion to the mind though not the computer which still gets it right.

## MCAD

MCad holds much promise and contains most of the features found in com-

mercial programs. The major drawback is the lack of hot keys. It is totally mouse orientated but otherwise user friendly.

Anyone who has played around with CAD programs will easily find their way into most of the operating features with some menu items like "ntics\*2 and ntics/2" or "slide" or "..1 Pen" leaving one somewhat confused unless you read the text file. In actual fact the ..1 Pen allows you to plot colours individually, a useful feature.

Axes and grid while accessible from the menu seem to do nothing. Actually it is necessary to replot or redraw to have the axis displayed and the grid is not shown but is toggled in or out of the active state.

Primitives are limited to line, box, circle and arc. There is however a directory which contains various electronic and logic components for use in drawing. It is possible to clone any of these items but how does one measure or set text size? In fact where does the text come from or go, it is very confusing trying to put text on the screen.

We have grid and data snaps but again how does one adjust the grid size?



There is a good co-ordinate readout showing actual location of the cursor and the delta movement when drawing.

It is possible to erase, size, rotate, change item, colour and line type by just clicking on the item. It is also possible to move a selected point and the attached lines. Grouping and ungrouping is possible also for ease of moving complex objects.

Information is provided to set up the printout or screen dump but I didn't get to try this. Generally not a bad CAD program but I think you would need to pay the Shareware fee and be kept up to date with bug fixes and improvements. For those who would like to try their hand at developing it further the source code is available on registering.

### PLAN

This is quite a good CAD program providing many of the features of expensive commercial software. In fact it reminds me a lot of X-CAD in appearance.

There are four menus, Project, List Functions, User Mode and Preferences. Down the right hand side are the line sizes, drawing tools, and editing or manipulating tools. Across the bottom are a series of parameters or variables covering X and Y co-ordinates and Array Grid parameters such as angle of rotation, width, height and X and Y counters for the Array.

Other variables include Text Parameters such as Width, Angle and Slant. Line width, Polygon Points, Dimension Preci-

sion, Ellipse Angle, Plot parameters including scaling of screen plotting and zoom and snap settings can all be preset here. Incidentally when you start to draw, the tool boxes disappear for easier working but return with a click of the right hand mouse button for access.

Drawing tools include Line, Rectangle, Box, Polygon, Circle, Arc, Ellipse, Freehand and Arrow. It is possible to Move, Size, Rotate, Copy, Modify, Change Colour and undo any drawing

*“Most importantly, for this type of program, hot keys are provided for just about every function”*

action or item although how Rotate works is not entirely clear. Dimensioning is manually controlled but the actual measurement is automatically entered in the dimension line.

There appears to be only one font for text but size (height & width) and angle of slant can be set. It is possible to modify and move this text at a later time should you wish, even changing the colour is possible.

Lines can be operated on after drawing by inserting points, breaking and

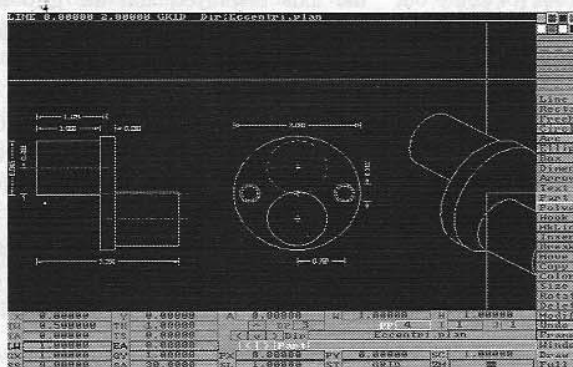
moving the sections or resizing and changing colour. A hook facility is also provided for modifying shapes, lines, etc.. Translation allows movement of an item a specified width and height from the origin. Fillets can be drawn and corners can be rounded for structural drawings.

The directory system allows a complete hierarchy of parts to be set up with the ability to create and name parent and child directories. These parts can then be edited individually as if it were a drawing unto itself and saved or retrieved as required.

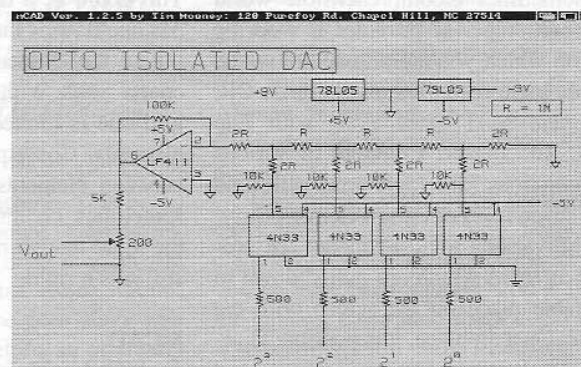
Output is flexible with plotting controls allowing a Full Plot i.e. Output adjusted to fill plotter paper, Scaled plotting for specific output requirements, Window plot for window only or the drawing specified either on screen or on file can be exported in a suitable format.

There are only eight colours available at any one time but those eight can be adjusted to suit quite easily. A range of redraw facilities are available and zooming and panning is very easy. Most importantly for this type of program hot keys are provide for just about every function but unfortunately they are not shown on the menus.

I suspect there is more to this program than meets the eye or is explained in the text file. There appear to be more views than I accessed and I am at a loss on how to use some features but time will tell as I intend to take a closer look at this program. Well worth a look if you



Plan



mCAD





need a good CAD program and don't have a fortune to spend. Certainly any upgrades will be worth getting hold of.

### Landscape

This is a most unusual program and holds much promise for the future. There is a definite need for a good program such as this. It allows you to lay out a garden plot in plan format placing boundaries, lawn, garden area and a range of plant material in place then stand back and view in perspective what the final project will look like in a stylised form.

On first boot up you are faced with a scaling requester which needs to be set up if your drawing is to bear any resemblance to the garden you are about to design. Lines are drawn by clicking at specific points which are then joined to the previous point. Thus you define the boundaries, the lawn and the earth areas.

The cursor is read out in the status bar at the top of the screen so that you can work out the distance travelled or length of the line. To stop drawing you just click within five pixels of the starting point and the program will close the boundary. Lawns, earth areas and footpaths are drawn in the same manner.

Next comes the plant material. Initially you are offered three choices, Tree, Flowering and Non-flowering plants. In the tree category there are dwarf, small and medium fir trees (Pine or Conifers) or deciduous trees. In the non flowering we have small, medium or large shrubs

and small or medium hedges.

In the flowering plants we have small or medium shrubs or roses with the possibility of red, yellow, orange, blue or multi colour flowers. We are even allowed a blue rose. These plants are placed at the appropriate location and then you select the draw mode.

At this point you are asked to indicate the point which you wish to look at and which will remain the centre of the screen. Next you are asked to indicate the

*"The author has big plans for the future in terms of landforms and other materials or objects."*

viewpoint you wish to look at the garden from. This action is in 3D, like *Calagari*, allowing you to choose to stand somewhere in 3D space. When you have made these selections the actual drawing starts.

The plants are mathematically drawn, perhaps fractals, and it may take some time to complete the final picture, however the result is quite good and would, I imagine, be very useful. It is possible to save in two forms, pure data which can be retrieved and modified or as IFF for use in other programs such as *DPaint*.

The author has big plans for the future in terms of landforms and other materials or objects. Zoom and scroll is also planned along with other features which will make it quicker and easier. There is also a need to be able to fit buildings into the picture.

### Conclusions

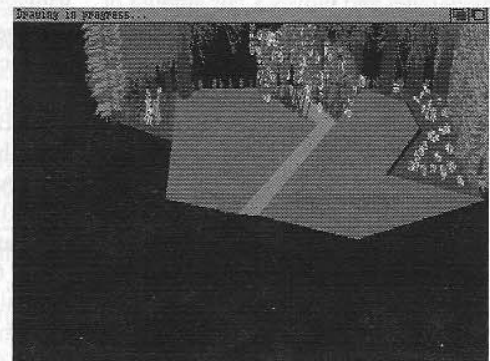
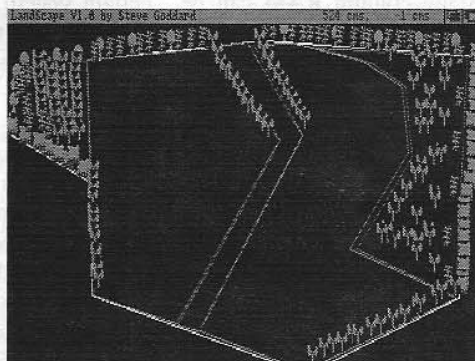
This is a very worthwhile disk for those interested in CAD or logic diagrams and it could be a stepping stone on the path to the time when you can afford more expensive and fancier software. In particular the Landscape program is well worth developing for the landscapers of this country if anyone feels like having a go.

### FACT CHART

<b>Category:</b>	C.A.D.
<b>Product:</b>	CAD Theme Disk
<b>Version:</b>	1.0
<b>Publisher:</b>	Prime Artifax
<b>Retail:</b>	\$8.95
<b>Disks:</b>	One
<b>Memory:</b>	512k
<b>Chip:</b>	512k
<b>Ideal:</b>	Flicker fixer, Hard drive, accelerator
<b>Manual:</b>	Text files on disk
<b>Comments:</b>	Very worthwhile
<b>Distributor:</b>	Prime Artifax
<b>Telephone:</b>	(02) 879 7455

**Left:** Setting up your garden in a plan view.

**Right:** You can view your garden from any angle, even change the elevation of the viewing point







# Accelerating your A3000 with Progressive's 68040

*When fast isn't fast enough, it's time to try faster. Progressive's 040, reviewed for the A2000 in our October/November '91 issue, is tested here by Nic Wilson in its A3000 incarnation.*

► At long last my Progressive Peripherals and Software 68040 board has arrived. The board was supplied to me by Progressive as a way of saying thank-you for the use of my *SysInfo* program that is supplied with the board. (Shareware software does pay from time to time). The board comes very well presented, far better than another board we were playing with from another company - who shall remain nameless.

It comes in a suprisingly small gloss colour box with plenty of information on the outside of the box for the discerning buyer. Inside the board was very well packaged and the unit itself is of a very high quality. The most noticeable feature is the small electric fan mounted on top of the large 68040 CPU. This fan is extremely quiet and moves a fair amount of air around the processor. The 68040 runs very hot and requires some form of cooling. A fan was chosen instead of a heat-sink because of the limited height available under the A3000 drive bay, where this board is located.

Personally I feel that a heat-sink would do a better job than the fan. The IC count on the board is low due to a programmable logic chip and 'GALS' mounted around the CPU. These contain most of the logic circuitry required for the board. Also included is a single

4MBit Page Mode RAM chip. This RAM chip is a special type that temporarily fixes a fault in two A3000 main IC's.

Super DMAC and RAMSEY have faults that stop page detect (static column) mode from operating correctly. The Kickstart V2.04 ROMs for the A3000 sets the static column bit automatically if static column RAM is found. This special RAM fools the operating system into believing that page mode RAM is installed in the A3000, as it only checks the first chip (U850). Therefore the static column and burst bits are not set by kickstart. At a later time when new versions of Super DMAC and RAMSEY are released from Commodore, your original RAM chip can be replaced and full advantage of static column RAM can be achieved.

Kickstart V2.04 ROMs must be fitted for a 68040 board to operate at all. The 'BOOT ROMs' that come shipped with the A3000 are not 68040 compatible. Although V2.04 ROMs for the A3000 are not yet released, Commodore does supply an 'Early Ship Kit' to suppliers of 68040 boards. When the final and official version of these ROMs are available, Progressive Peripherals will notify users of the upgrade.

Also supplied is a gloss black '040'

sticker with the Motorola logo on it, so users can boast of the board in their A3000. On the supplied disk is the FPU emulation library that the 68040 requires to replace instructions that it lacks, this is so it can be compatible with the 68881/68882 FPU's. Although these instructions are run in software they still are faster than a 25MHZ 68882 can do.

It is not that the 68040 lacks instructions, it is that it has a newer faster instruction set. The emulation library was written by, and licensed from Motorola. Progressive will notify users of upgrades as available, and one is expected soon. There is a library named 68040.library that was written by Commodore to allow V2.04 to operate better with the 68040 and a new version of 'SetPatch' to install certain system functions within this new library for the 68040. All the software on the disk seems to be of high quality and operates well.

## Installation

Installation of the board was painless, but did require the A3000 to be completely stripped. The installation procedure is beyond the scope of the average user and as suggested in the manual, should be performed by a qualified technician. The Kickstart ROMs need to go in the rear set of ROM spaces. These are





supplied empty by Commodore, sockets have to be soldered into these places and then the ROMs fitted. These sockets are supplied as part of the early ship kit.

After I installed the new kickstart ROMs and tested them, I installed the 68040 board and it worked first time, but immediately gave hard disk errors that eventually locked the A3000 permanently. Further investigation and a phone call to Progressive in the States found that some A3000s were shipped with defective Super DMAC chips. My A3000 happened to be one of these.

I am still waiting for a replacement Super DMAC, so for the time being I had disabled the on board hard drive and installed a Trumpcard SCSI card. Then to my surprise a very good and close friend of mine in Brisbane offered to exchange

Super DMAC chips for a while until mine arrived. This was very gratefully accepted and he even drove two hours to deliver it to me. I take this opportunity to thank Bruce Brown for his generosity and concern for a fellow Amiga'an. (Bruce is also a regular contributor to Professional Amiga User - Ed.)

AmigaDOS V2.04 works fine with the 68040 and fully supports it, including one of its special modes called "Copyback". Copyback really gives the 68040 a boost in speed, but unless supported and controlled properly by the operating system, can cause large compatibility problems, especially with I/O devices or DMA devices such as hard disks. This is the main reason for the 68040.library file, it helps some incompatible software to operate correctly with Copyback.

I have found compatibility to be surprisingly good. Most tools I use on a day to day basis worked fine, and a few that didn't were quickly replaced with other similar programs that work. I am currently building a list of popular programs that fail on the 68040. (To be published in a future issue).

### Making Comparisons

Before reading any further, keep in mind that we are comparing two micro processors that are running at the exact same clock speed of 25 MHz in these following speed tests. In all cases each processors caches were enabled into their fastest modes. In all tests the latest Kickstart/Workbench V2.04 ROM version was being used, and normal background utility tasks still running. This gives a



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much better day to day expectation of performance than absolute best results. Some reports that I have read really confuse the issue. The 68040 IS around 4 times faster than the 68030 at the same clock speed, but some reports state that the results are disappointing in the 'real world'. This is really a silly comment because in every case they were talking about the performance of the Floating Point Unit. The FPU is not 4 times the speed and no-one ever stated that is was, especially in 68882 emulation. Once specific 68040 FPU programs are written the gap between these two FPU's will be very significant but even then only around 200% not 400%, also remember that 50MHZ 68882 will only be twice the speed of a 25MHZ 68882 if it is hanging off a 50MHZ 68030 and then only if your memory is fast enough. The combination of the CPU and FPU within the one package and much larger caches, really makes the 68040 a much more powerful package than the 68030/68882 combination.

Now that the 68040 was installed and working I immediately set to work making sure that my *SysInfo* program was fully compatible with it. Even though *SysInfo* already recognised and worked on the 68040 it needed a couple of quirks fixed. I have now released V2.53, which is fully 68040 compatible and supports all of it caches and cache modes.

Speed results are very impressive. I chose to use *SysInfo* for these tests for two reasons. Every other program of its type either guru'ed or failed to recognise 68040, and I know exactly what *SysInfo* is doing, so the results are very meaningful to me. Speeds against other Amiga models are shown below. These show processing speeds without using the maths co-processor, although a new maths processor MFLOPS routine is in the latest *SysInfo*.

- Progressive 040 board is 35.2 times faster than the A500, A1000, A2000 standard unexpanded machines.

- Progressive 040 board is 10.1 times faster than the A2500, A2000 - A2620 68020 14MHZ card.

- Progressive 040 board is 4.06 times faster than the A3000 standard as shipped from CBM.

### Compatability

Total compatibility is not an issue. The software supplied with the card has a program to switch you back to 68030/68882 mode. When you click on this icon, the program informs you of the current processor that is enabled and gives you the option to switch over. Once switched the Amiga will stay in that mode until the switch program is run again. This program works very well and I continuously switched back and forth for a while very quickly and with no problems.

The disk also comes supplied with an early version of my *SysInfo* program. A new version is on the way to Progressive at this time so future cards will have this newer version. Tests that we have done so far between A2000/68040 cards and A3000/68040 cards show large differences. The A3000 cards are much faster on every test we have made so far. This of course is to be expected because of the full 32 bit wide architecture of the A3000.

I knew that all the graphic artists would want to know the performance on ray tracing. I asked Australia's leading *Real 3D* guru, Bruce Brown, to test the board out while he was here it Toowoomba. Here are his results.

### 3D Rendering

Rendering speed was tested with *Real 3D Turbo* Version 1.4. A 20 frame 320x256 animation of a 14x14 point mesh, morphing to a 14x14 point sphere, with no light source was rendered. The 20 frames took the A3000 in 68030 mode 9 minutes and 52 seconds. When switched to 68040 mode the same animation took 6 minutes and 8 seconds to render. This shows the speed of the 68040 when doing complex maths with the in-built co-processor. This increase of 60.8% is significant in terms of larger, more complex animations. An animation which would take 24 hours to produce on a A3000 should be completed around 14 hours 50 minutes with a Progressive 68040 board fitted.

Remember that current software is

optimised for the 68030/ 68882 and not for the 68040. Most 68882 maths instructions have to be emulated in software on the 68040 because it does not support the full 68882 instruction set internally. As these emulation libraries improve and 68040 specific versions are released, the 68040 will get faster. Most of the 68040's floating point instructions are new and exclusive to the 68040. These internal instructions execute extremely quickly as they are hard wired rather than using microcode as the 68030/68882 combination does.

To compare a different program I asked one of Australia's leading *Imagine* Guru, John Rowe to come and test *Imagine* on the 68040, and here are his results. Using *Imagine 1.1* we tried two different tests. The first was a full render in scan-line mode of a 352 pixel by 564 pixel image rendered in Impulse's RGBN-12bit image storage format. The render was of 16 objects having a total of 3404 points and 5847 faces, the objects having a certain degree of reflectivity. We used one light source. The A3000 in 68030 mode took 7 minutes 48 seconds, in 68040 mode 5 minutes 16 seconds; a 48.1% increase in speed. The second test used a make preview of 100 frames of an animation using the same objects. 68030 mode took 11 minutes 19 seconds, 68040 mode took 6 minutes 5 seconds; an 86% increase in speed.

John also did a test using the floating point version of *Animagic* over 20 frames using a 320 x 256 bitplane picture and *Animagic's* Unfold9 DVE. This is where the 68040 really showed its power! The 68030 took 5 minutes 51 seconds, the 68040 took 2 minutes 40 seconds. A massive 119.3% increase in speed while emulating the 68882!

If any reader would like some other specific tests done on the 68040, or would like his/her programs tested for 68040 compatability, contact me and I will arrange for the tests to be done.

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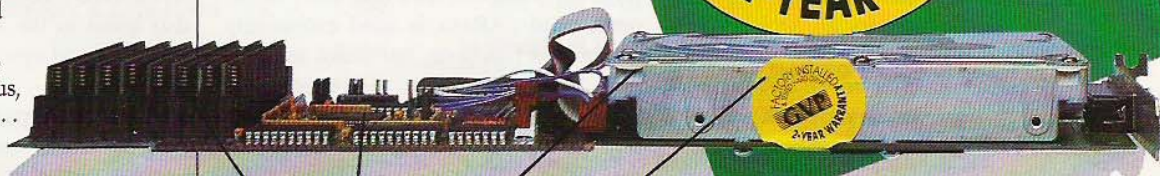


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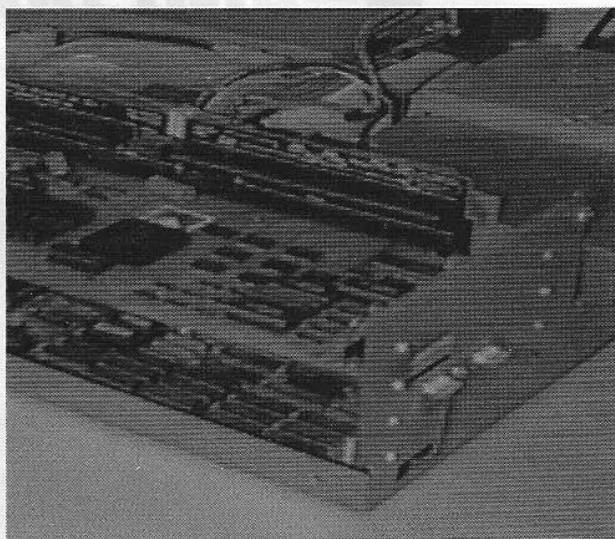




# VD 2001

## 24-bit

### Framegrabber/Display



*As the 24 bit market marches on, the choice for PAL users is finally starting to include European products, as Bruce Brown discovered.*

► VD2001 offers many useful features for those who are seeking high quality output for display or recording. The board is marketed by G2 systems in the UK as the Master Card. It offers a lower cost alternative to the popular GVP PVA card while providing the four main functions of 24 bit framebuffering, framegrabbing, genlocking and digital video keying and mixing.

The package includes a Zorro II compatible card suitable for an Amiga 2000, or 3000 computer, a composite/Y-C to RGB video converter, menu driven operational software, a 24 bit paint program called *VDPAINT* and a quantity of manuals.

Installation, ARexx control, and User manuals are well written, except for the occasional untranslated German word. All are easy to follow, comprehensive and include assorted programming examples, technical data, and help sections.

#### Installation

Hardware installation is straightforward, but one point to note is that 1 Mb of your machine's autoconfigure memory space is required by the card's on-board video memory, so an A2000 should be configured with 7 Mb or less for the card to operate correctly.

Setup of the main control software, start-up script, and supplementary paint program is easy. A hard disk drive is recommended. ARexx is used extensively for various functions, but is not required for correct operation. However, it is highly recommended that ARexx is present, as this provides maximum versatility.

The current software revision requires the CPU data cache to be switched off when used with 68020, 68030 or faster processors. This is necessary, as the processor will try to cache the video data which is bank-switched on the

card's 1.5 Mb of video memory. With AmigaDOS 1.3, the cache can be switched off with the public domain program *SetCPU* or with the *Cpu* command under AmigaDOS 2.0 and above.

A source code library with extensive examples is included for programmers or developers who wish to directly access the VD2001 card's functions from their programs. Full technical specifications of the card's connectors and signals are also listed in the manual reference sections.

#### Input and Output

Input and Output is achieved by connecting the supplied VSC10 composite/Y-C to RGB converter to the 23 pin socket on the VD2001 backplate. This unit is required if you need to convert video signals to the card's native RGB input mode. The converter has a 23 pin socket for connecting an RGB





monitor, such as a 1084S or similar to view the VD2001 output.

A SCART socket (Euro connector) provides RGB output connection to video mixers or studio tape units. A suitable encoder must be used if your videotape equipment does not accept RGB output from the card. Unfortunately, no composite video or Y/C output is available directly.

This may appear to be a disadvantage, however to obtain broadcast quality, the RGB output must be used in an RGB downstream keying mode through a vision mixer or to another component format such as composite/Y-C/YUV using a good quality video signal transcoder. Built-in RGB to composite/Y-C encoders generally do not provide the quality required for professional use.

The card's genlock and keying functions are independent of the computers operation. A useful feature is an ARexx controllable TTL trigger output to initiate automatic recording of frame sequences.

### Operation

If you wish to use the framegrabber, you will need to provide either a black-burst signal, Y/C via a standard mini-plug connector, or composite video through a six pin audio/video DIN plug. The video signal converter has controls to vary luminance, contrast, colour and contour and automatically recognises composite or Y/C signals and switches between the two with a degree of intelligence. The VD2001 has an internal sync lock if no external video source is present.

All user-preference settings such as External/Internal sync, overscan, contrast, colour levels, interlace and other options can be placed in a VD2001 start-up file so custom configurations can be initiated on startup. Multiple preference files can also be created and loaded as needed for different applications.

Twelve demonstration ARexx macros are supplied with the package. As the monitor display is continuously digitised in real time, (10 Mhz sample rate, 1/25

second) many special effects are possible, even 'colour cycling' of the live signal by manipulating the card's colour registers. Effects such as drawing a drop shadowed box frame with live video in the box can easily be produced at the press of a key.

Smooth 24 bit colour spread backdrops similar to those created with Art Department Professional, but with extensive programmable variations, can be created with little difficulty by using the more than 200 built-in ARexx commands available. Backdrop screens for titling,

advertisements, or for use as 24 bit ray-tracing texture maps are some of the applications where these facilities will prove useful.

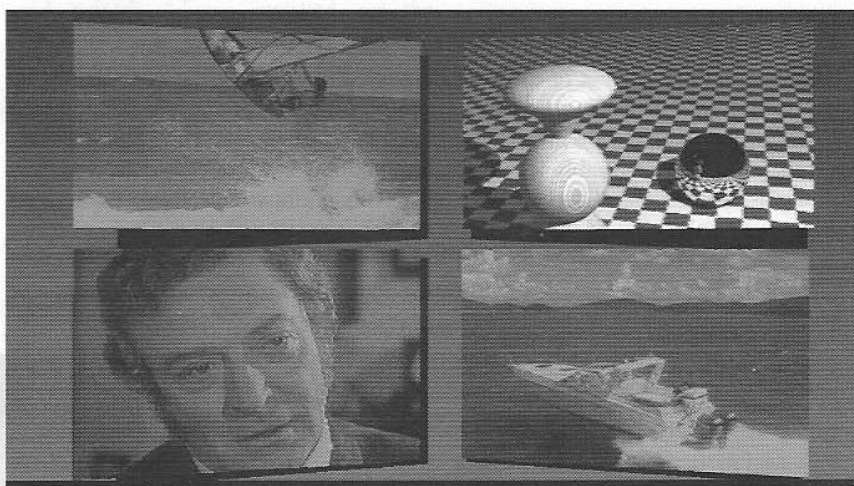
Keyboard hotkeys are fully user configurable, and two extra menus for user-defined functions and external program setup allow customisation of the software to suit your working requirements.

### Display Resolution

Video modes are user-selectable at between 344 X 512 and 512 X 625. The highest quality mode is hires interlaced



Composite created with digitised images using brush cut and sizing features.



Five full-screen 24bit IFF texture maps rendered in one image with Real 3D 1.4 Turbo Pro. This image was output direct to the VD2001 buffer by Real 3D, and is unretouched.





overscan which effectively corresponds to a 10 Mhz sampling rate and is capable of displaying and digitising all lines present in a PAL signal (NTSC as well) in real time (20 ms for a half frame, 40 ms for a full frame).

For image display from ray-tracing software, or scaled images from *Art Department Professional*, the recommended loaded image size is 512 X 576. On a close inspection, I could not identify individual pixels on 24 bit displayed images and digitised video, due in part, to the fact that colour gradients are so smooth with 16.7 million colours available. For this very reason, dithering options are redundant with 24 bit display devices. It is just not necessary. If you haven't seen a 24 bit picture before, have a look. You'll soon see why.

### Compatibility

The VD 2001 card supports many image formats including IFF, ILBM24, *Sculpt*, *Caligari*, *Beams*, and its own VD24 and VD16 formats. 24 bit Images produced with popular ray-tracing packages, *VistaPro* and *Art Department Professional* all load without problems. Currently the only program to directly render to the VD2001 buffer is *Real 3D*, which provides a framebuffer control menu on it's rendering screen.

### Framegrabber

The VD2001 framegrabber produces excellent results. Just a press of the keyboard spacebar and the picture is yours. Typical ILBM24 file sizes are in the 500-600k size range and are visibly identical to what you see as input video. A large capacity hard disk drive is very handy and a recommended purchase, as it is so easy to collect large quantities of quality

pictures for later 'slide-show' viewing, processing with *Art Department Professional* or use as 24 bit texture maps in ray-tracing packages.

Best results are achieved with Hires, Interlace, and overscan settings switched on. A notable effect while using the interlace mode is with fast-moving objects on-screen. Normal image jitter in the grabbed frame can occur because moving objects can have different 'half-frames' or fields. Non-interlace mode allows you to freeze all motion, but with a slightly reduced image quality.

Framegrabbed images can be saved in any of the previously mentioned file formats. One comforting feature is that as the VD2001 has its own video memory, a picture in the buffer will survive a computer re-boot.

### Digital Keying/Genlocking

The VD2001 software has several masking functions so you can mark certain areas of the screen down to single pixel level for keying or genlock purposes. A magnify mode simplifies this task. Also, the paint program will multitask with the main control program, and can be used for mask editing if desired. It also accepts AREXX drawing commands issued from the main control software.

External video or your choice of colour will show through the masked areas, or alternatively, will be blocked by the mask. Drawing tools are provided for mask editing, and special effects can be produced when this feature is combined with the many brush sizing and positioning options, and logical AND, OR, and XOR functions to selectively mask areas of the display.

There are 12 brush buffers which use Amiga memory for temporary storage of

cut-out portions of images up to full screen size (subject to memory availability). Brush scaling is a particularly nice feature with sizing possible by pixel dimension or percentage. Width and height gadgets calculate the correct proportions. Any scale is possible. You can enlarge a one pixel brush up to 512 x 512! Large reductions also work well.

Images can be 'softened' by first reducing, then re-enlarging to their original size. Some nice effects can be produced this way. Brush positioning is pleasant to use and accurate to pixel level with a grid of 25 gadgets, along with redo, manual, and cancel options.

A Chroma-key effect can be produced by sampling one or more areas of your image to define a colour spread which is then transparent to an incoming video signal. These mask functions do not affect the buffer image in any way.

### Image Processing and Conversion

A powerful part of the VD2001's software is its built-in image processing capabilities. These include Colouring filter, Grey filter, Rectangle filter (useful for reducing noise in video images), Gauss filter, Median filter, Laplace filter (enhances object edge sharpness), Smoothing filter, Binary filter, Sobel filter, Gamma correction and the list goes on. These are used to produce special effects or to enhance images, and can be applied to entire screens or selected areas defined by masks.

Some of the filtering functions perform fairly complex matrix transformations but produce very subtle and desirable results. In some cases, the VD2001 image processing tools offer more features and creative control than are available in other packages such as *ADPro*.

**VD2001's  
Filter menu  
screen has  
many image  
processing  
options.**



**VD2001 to  
Amiga Image  
transfer  
option  
screen.**







One interesting use for the various filtering options is to greatly enlarge a portion of a video digitised image and apply various filtering methods to enhance the image. There is great potential here for security, law enforcement and scientific applications! (see example speedboat picture)

Image Conversion functions to convert 24 bit images or brushes to any Amiga IFF displayable format are included. There is a lot of control over this process with gamma correction, dithering and palette being fully adjustable. Also Amiga screens can be transferred to the buffer for titling or logo superimposing purposes.

### 24 bit Painting

*VDPaint* is the supplied 24 bit paint program with two versions, standard and 68020. All the usual functions such as brushes, spraycan, line and curve tools are there, but the manual is in German and is supplied as a text file on the disk. The software revision I tested was 0.48 and, from what I could gather, the Paint program is currently undergoing revision as some functions have gadgets which don't work yet, and I found a few small

bugs.

However, there is a lot of potential and usability built in, with extensive ARExx scripting available to create drawings or alter framegrabbed or ray-traced images and some nice Anti-aliasing, gradient, and transparency options.

Brush stamping while moving the mouse is surprisingly quick, although about 3 times more data needs to be processed compared to a HAM image. The colour selector is easy to use and intuitive considering there are 16.7 million colours to choose from.

The program multitasks with the main VD2001 control software, so editing or manipulation of a framegrabbed image or 24 bit picture from other software can be performed via ARExx or directly by changing screens after the image is captured or loaded.

A pop-up menu appears beneath the drawing cross-hairs with a click of the right mouse button, and the left button is used to select the desired options. Also, the program has a lot of hot-key equivalents, many the same as *DPaint*, so the transition to 24 bit is relatively painless. It takes a bit of getting used to your

mouse pointer jumping back and forward between two monitors, but the system works well. The *IconX* window on the workbench monitor also lists all actions carried out on the 24 bit video paint screen, including brush co-ordinates and hot-keys used.

*VDPaint* is easy enough to use, but I had to use a certain amount of guesswork and experimentation due to my inability to read German. I am still discovering features after using the program for a few weeks. Hopefully, an English version of the manual will be available soon. Overall, *VDPaint* as a free 24 bit paint program does the job, but needs further fine tuning.

### Options

Two additional Paint packages are now available for the VD2001 namely *Imagic* and *Paintmaster*. Both are professional quality 24 bit paint packages with hefty price tags. I've only seen the advertising material at this stage. Another option that should excite the purists is the announcement of the SALLY board. This piggy-back board can contain up to 100 Mb of RAM and is used to store 112 frames or 4.4 seconds of video when



*Image enhancement using the VD2001's various filtering functions. The inset was enlarged approximately 300%*

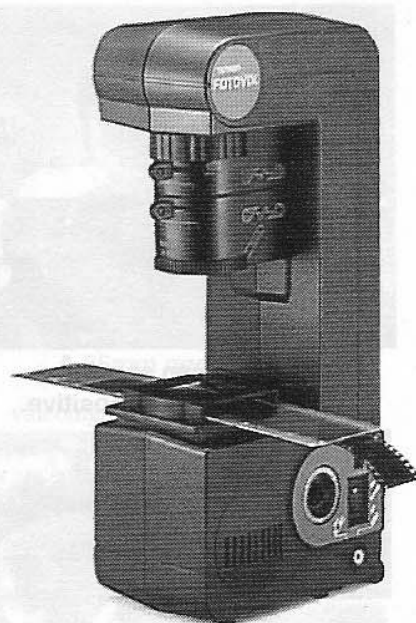






# Picture this...

By Dennis Nicholson



► This review is somewhat different from other Amiga hardware reviews, mainly due to the fact that the equipment mentioned here, the Tamron Fotovix, was not originally designed to be used with computers, especially Amiga computers. But with an eye for the 'new' I managed to combine both technologies to create a unique Amiga digitising system.

The Tamron brand name is more synonymous within the world of still photography. Their range of camera lenses, and other associated attachments, have kept photographers snapping away happily for many years. Now Tamron have made another step forward, this time into the video arena. Their Fotovix Film Video Processor unit allows you to 'Watch your photographs on your home television set'. More simply described as an 'electronic enlarger' (my description), the Fotovix consists of a 1 1/2" solid state image sensor capable of displaying 323,000+ pixels. In video layman's terms that means it uses a CCD chip to grab images in much the same way as a CCD video camera operates. The difference here is that, combined with the macro zoom lens, the

unit has been specifically designed to video photographic negatives (and/or slides) for direct transfer to videotape.

"Wow!" I hear you say sarcastically, "I can already do that with my home video camera". Yes, but can anyone show me a home video camera that zooms when in macro mode? The Fotovix's lens allows for up to a 3x time zoom into a 35mm negative, thus allowing for cropping of specific image sections, (its bigger brother, the Fotovix II-X comes with a 6x zoom function). Conversion of a negative, held in position below the lens, to its positive image is achieved by flicking the Negative/Positive switch on the side of the unit, and viola, instant slideshow! Output of the resulting video picture is via a standard RCA (composite) plug direct to the video-in socket of a video recorder, or to the equivalent input on the back of a television set if so desired. The Fotovix also contains a built-in colour balancing option which allows the user to fine-tune both the colour saturation and hue of images. By moving the lever in North-South East-West positions, much in the same way as you would use a joystick, varying degrees of Red, Green

and Blue are either added, or subtracted, to the electronic image, thus giving greater colour control of the image being recorded to video.

All this techno-whizz got me thinking, what if I added a colour splitter between the Fotovix and my Amiga, would it allow me to use NewTek's *DiGiView* to digitise my colour negatives direct to disk? Why a colour splitter? As mentioned, the Fotovix sends out a composite signal, as do the majority of colour video cameras, and this is fine for direct recording to video machines. But computer image digitising requires the colour elements of a video signal to be separated into the individual Red, Green and Blue components, and this is the job of a colour splitter.

But first things first, I had to line up an appropriate 35mm colour negative on the Fotovix by viewing the image plugged directly to a television set. The Negative-to-Positive switch was activated thus reversing the negative's polarity. I must admit that seeing negatives instantly turned into 'slide' form was a continuing novelty all the time I had the Fotovix for review. Once satisfied with the image on the television set

*Professional Amiga User*





**Split screen showing  
bottom neg - top positive.**



**Example of Fotovix's 3x zoom  
option.**

it was time to move over to the Amiga. I removed the RCA lead from the television set and attached it to the video-in plug of my Vidi-RGB splitter, and in turn, connected the splitter to the *DigiView* hardware. The *DigiView* software was then run, and set to grab in the interlace (320 x 512) 4,096 colour mode. All three colour passes (R,G,B) were performed, and it was time for the big reveal!

Display was selected from the pull-down menu, and slowly the picture scanned its way down the monitor. A perfect image first time, exactly as it was presented to me on the television set. Several more negatives were digitised and the results were all consistent with the first, not a jaggie or glitch amongst them. Next it was time to use Fotovix's zoom option, and this is simply a case of using the zoom handle to move in on the negative up to 3x magnification.

This does not sound like a large in-



**Final positive image showing original negative insert.**

crease in size comparing it to video camera lenses that have up to a 10x zoom capability, but in this instance full magnification allows for excellent cropping and reframing options. Imagine the family portrait that is spoiled by a over abundance of unwanted background, just zoom in and reframe accordingly to heighten the picture's impact. Although the Fotovix lens does have a focusing barrel, it is not required to refocus when using the zoom function, as focus remains constant throughout the length of This does not sound like a large increase in size comparing it to video camera lenses that have up to a 10x zoom capability, but in this instance full magnification allows for excellent cropping and reframing options. Imagine the family portrait that is spoiled by a over abundance of unwanted background, just zoom in and reframe accordingly to heighten the picture's impact. Although the Fotovix lens does have a focusing barrel, it is not required to refocus when using the zoom function, as focus remains constant throughout the length of the zoom. Correct image exposure is ac-

complished by an adjoining iris lever, moving it in either the plus or minus positions will alter the amount of light input accordingly.

Negatives are held under the lens in their own clear plastic carrier which allows for easy repositioning from negative to negative. On the other hand, 35mm slides (positives) use a carrier set that can hold five slides at any given time. A glass film carrier is also available as a separate option, and it is specifically designed to hold 16mm motion picture film. The latter is primarily for the Fotovix II-X, as it has a longer zoom range, and can get in much closer to a smaller picture, but using the 3x zoom version I was still able to obtain a full-frame image from some 16mm images.

The film carrier is slid into position through a spring-tensioned holder. This holder can be rotated around a 360 degree axis which gives the user the ability to digitise both horizontal or vertical negatives in their correct format, although it must be remembered that a vertical image will have black borders



either side of it, but of course you can use the zoom option to move into the picture to alleviate the borders. Another advantage of the rotating holder is that negatives that may be somewhat out of plum, i.e. photographed at an odd angle, can be corrected by gently turning the holder until all is square again. This certainly has the ability to turn Auntie Emma's 'action shots' into seemingly well-planned objects d'art.

The main advantage I can see in utilising Tamron's Fotovix is with the ease of operation. Yes, it is possible to use a colour video camera, combined with its macro lens to digitise negatives (again requiring a colour splitter). And the *DigiView* software also has the Positive-to-Negative option available, but the Fotovix is an all-in-one unit, excepting the colour splitter, that takes less than a minute to setup. In fact, it only requires a user to plug in the power cord, switch on, and place a negative strip in its holder.

Another plus is its unique ability to zoom into images very simply, no more repositioning your negatives closer or further away from the lens to facilitate focusing. The Fotovix's light source comes from a constant built-in fluorescent light, which negates the need for white background boards lit with an assortment of lights. Once you set the colour balance for your first negative via the joystick, all remaining images will reproduce accordingly, unless of course you want to try for some colourised special effects.

Unfortunately, one type of negative the Fotovix does not reproduce well is black and white. I was really looking forward to viewing my old school negatives taken on Kodak Plus-X all those years ago. No matter how much I tweaked the unit's colour balance I could not get a true black and white image on the screen, the absolute closest I could get was a sepia-toned representation of the original. But it must be remembered that this is only a problem for people wishing to copy black and white negatives direct to video. For Amiga digitising users the problem is



Positive image from negative.

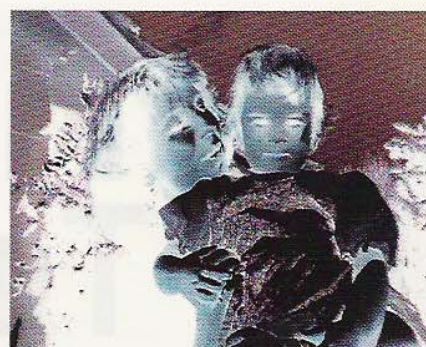
easily overcome by turning the *DigiView* software colour mode to off, thus obtaining perfect black and white pictures.

The Fotovix II-X, III's bigger brother (shouldn't it be called the III-X?), comes equipped with additional options. I have already mentioned its 6x zoom

*"The main advantage I can see in utilising Tamron's Fotovix is with the ease of operation."*

lens, but it also can take in negative sizes greater than 35mm format, such as 120 film (2 1/4" x 2 1/4"). Although I did find that if I removed the III's film carrier holder I could place a 120 transparency directly on the light source glass area and digitise at least two thirds of the total picture.

Thankfully fluorescent light is a cool light source and the transparency remained flat without the need to curl if placed under a tungsten 'hot' light. Another bonus of the II-X is the availability of additional lenses. Seven optional lenses can be purchased and used for specialised requirements. These include wide-angle adaptors for large format films, and even A4 paper format size is catered for. Finally, the II-X's body is adjustable into varying positions



A 35mm negative.

for videoing/digitising from books, magazines and the like. Both Fotovix units are equally happy sitting upright in their default vertical positions, or laid flat in the horizontal position.

If you require a permanent digitising setup, as opposed to utilising your home video camera between birthday parties, then Tamron's Fotovix system may just suit your purposes. Personally I would like to see a future release of the hardware in the Super-VHS format, as the 323,000+ pixel resolution still only relates to standard 250-line VHS resolution, and this is considerably below what the Amiga computer is capable of reproducing.

Dennis Nicholson is the editor of *Graphics-Palette*, the *Graphics/DTV* disk-zine for the Amiga.

#### FACT CHART

<b>Category:</b>	Digitising Hardware.
<b>Product:</b>	Fotovix III.
<b>Manufacturer:</b>	Tamron.
<b>Retail:</b>	\$1,399.00. \$3,899.00 (II-X).
<b>Comments:</b>	The permanent digitising setup. Requires colour splitter.
<b>Distributor:</b>	Ricoh Australia Pty.Ltd
<b>Telephone:</b>	(03) 553 1999.





# MakePath & TerraForm

## for Vista and VistaPro

Review by Peter J. Ward.

*The fantastic images sent to earth from the Voyager space probe often revealed distant landscapes which even Science Fiction had not predicted. Super computers at the Jet propulsion Labs in Pasadena California were used to transform some of these images into surrealistic 'flybys' taking us on a voyage past the volcanoes and canyons of Mars or around the tiny but ever so twisted world of Miranda. These enigmatic images were screened albeit for a brief period, by nearly every major television news service across the world, and in doing so, not only gave some recognition of the talent of the voyager imaging team but also revealed our natural curiosity about worlds beyond our own. What does this have to do with your Amiga you ask? Could it be possible that a humble desktop computer can give you vistas of worlds other than our own? What follows may surprise you.*

► About a year ago, a program known as *VistaPro*, distributed by Virtual Reality Laboratories, gave Amiga owners the chance to generate images of landscapes by using Digital Elevation Modeling (DEM) data to replicate views of some far off corner of the globe. There was even data from the planet Mars which allowed the user to view Olympus Mons, a martian volcano twice as tall as the highest mountain on the earth. By using a "Script" facility *VistaPro* allowed the user to take "snapshots" from various vantage points in the landscape. These images could then be compressed to create an animation thus taking you on a journey through the landscape. However,

there were some problems with the scripting facility of *VistaPro*. It was difficult to create an animation which gave a fluid motion through the landscape and the results tended to be jerky, and not very lifelike.

### Enter MakePath.

Imagine flying along a Martian canyon, nearly twenty miles deep and as long as the Australian continent. You fly level with a cliff face, then swoop around a rocky outcrop, panning the camera as you sweep past a mountainside, then place your spacecraft into a barrel roll as you journey skyward. Creating just such a sequence is all too easy with

*MakePath*. There is a catch. After having rendered just such an animation, I discovered a twenty megabyte data partition on my hard disk was nearly filled!

*MakePath* is a module designed to work with the landscape rendering programs *Vista* and *VistaPro*. Without either of these you can go no further. With them, however, you can use one of several models to go exploring in some far off place, be it terrestrial or go someplace not yet found on any 'Jetabout-holiday' brochure.

The models available are based on the motions of any of the following:

Glider, Jet, Cruise missile (!) Helicopter, Dune Buggy and Motorcycle.

The variations between each are based on things like the angle of bank during a turn, height above the terrain, the amount the camera pitches up or down with rising and falling terrain and so on. After deciding which model you want your camera to follow, you then can draw a path through the landscape.

This is achieved by first loading some landscape data into the path editor. Any landscape will do, as long as it conforms to the *Vista* DEM format. While *VistaPro* can provide several dozen terrestrial landscapes along with millions of fractal vistas, I used data from the Valles Marineris six disk set of the same region on the planet Mars. After drawing your path through a 'map' like view of the





landscape, simply click on the 'makepath' gadget and the program will automatically create smoothed trajectory. The software uses either Bezier Curves or BSpline curves to create smooth motion paths. The latter will not necessarily contain all of your editing points, however you often gain a smoother motion as a result.

Normally the camera is set at an angle parallel to the motion path through the landscape, however it is possible to set one or several targets within the landscape. It takes Makepath a few "frames" to pan from one subject to the next, with targets in close proximity having higher pan rates. If at any stage you are not happy with the computed edit points within your path, the program allows you to edit each point along the way in both horizontal and vertical planes. The program has automatic collision avoidance protection, so even if you are rocketing through a valley at a great rate of knots, the software will avoid flying the camera into a hill. This feature may be bypassed however, should you have a desire to fly into a mountain.

A quick representation of the camera motion through a landscape is available through the "preview" option. This mode quickly renders simplified wire frame images of the camera motion, prior to full rendering within *Vista* or *VistaPro*. If any changes need to be made, they can be quickly assessed here. With edit points moved, or camera targets changed, the path can be quickly recalculated by clicking on the *Makepath* gadget for a second (or subsequent) time.

*Makepath* is supplied with a 22 page manual, which covers all of the menu and gadget items, and also includes three tutorials on how to use the software. The program easily installs onto a hard disk, is very quick in execution on an accelerated Amiga, but somewhat slow when used with standard A500 or A2000. Due to the very large size of the animation files generated using *Makepath*, a hard disk is almost mandatory. If, however you already own an accelerated Amiga and have some hard disk space to spare, this program is a must.

*Terraform* fills another gap in the *Vista* and *VistaPro* software packages by actually allowing you to edit any landscape, or if you're feeling inspired after reading a little from *Genesis*, making your own world from scratch. The supplied manual is a little thinner than that of *MakePath*, 13 pages in total. This is not surprising as I found myself competently using the program even before I confirmed the results of my tinkering with landscapes by the manual. For those who require a little coaching in building new worlds, a couple of quick tutorials are also supplied in the manual. *Makepath* is supplied in math co-processor and standard Amiga versions on a single 3.5 inch floppy, and is easily installed on a hard disk.

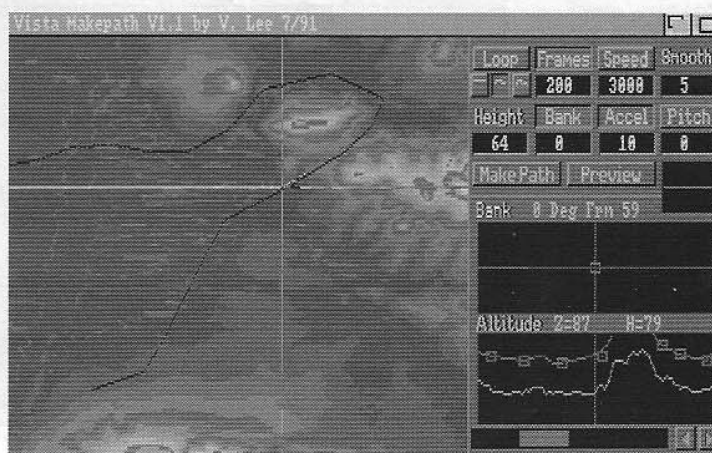
All the basic world creation tools are included. A mountain icon can be used to create anything from a mole-hill to Everest. A similar "nuke" symbol is used for cratering the landscape. Other tools include raise/lower, which can be used to change the general altitude of the terrain, a steamroller which flattens the ground over which it is placed and smooth and roughen tools which can be used to create gentle undulating hills or the western coast of Tasmania if you desire. All tools worked quickly and intuitively, and I found creating a new patch on planet-X was an easy matter.

Apart from a topographical map type of display of your new world, *Terraform* also represents the terrain in a simplified three dimensional perspective view. The

area covered in the 3D view can be varied, allowing examination of fine detail or "the big picture" with a simple push of a corresponding slider gadget. Due to the math intensive operations involved in computing changes to strange new worlds, I found *Terraform* to be a little slow on an unaccelerated Amiga.

When combined with *Vista* or *VistaPro*, *MakePath* and *Terraform* create an awesome software ensemble. The ability to move through and change almost any landscape is something humans have been doing for some time and occasionally take for granted, but not all of us have the time or money to wander off to Yosemite National Park at a moment's whim and none of us has yet flown across the Olympus Mons caldera on Mars.

As educational tools these programs have great promise, but in reviewing this software I sensed much more that this is about to evolve in computer software. Imagine placing a pair of goggles over your eyes which project a three dimensional view of some foreign, alien or self generated world, which you could then go for a leisurely walk, drive or fly through. Yet, at this moment that very concept has been created, perhaps not in three dimensions, and the animation files aren't quite up to real-time speeds yet, but with this software this wonderful technology is available now. For more information contact Dataflow on (02) 331 6153.(RRP \$79.95 each.)



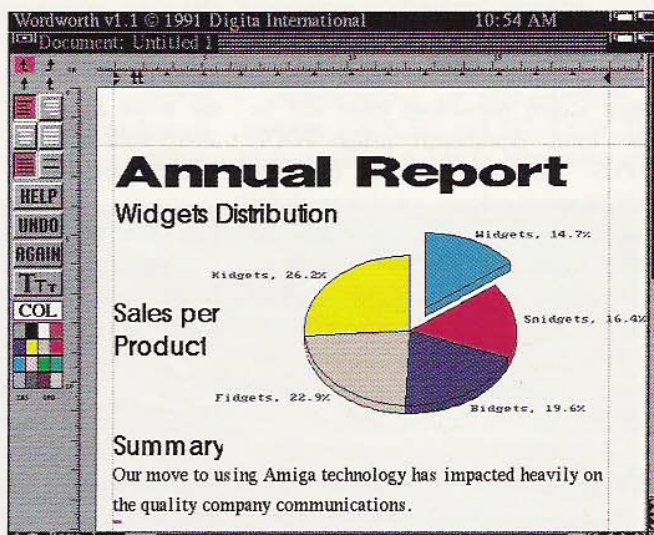
**MakePath in action**







# Wordworth 1.1



## Background

*ProWrite 3.2* has a long pedigree. It's an established program from a company who have boasted of *ProWrite's* reliability since day one. It was guaranteed bug free and I have never witnessed a *ProWrite* induced system seizure. New Horizons have continued to develop *ProWrite* to the latest release, version 3.2, which has a slick, clean, Workbench 2.0 look and a host of improvements. *Wordworth's* history is shorter.

Digita have published Amiga programs for some time, however the earlier titles were a trifle fractured - poor adaptations of MS-DOS programs. About a year ago things improved with the release of upgrades to some of their older titles. Then, in the first half of '91 *Wordworth 1.0* shipped. A hefty product for the first release. By the time version 1.1 arrived, Digita was also shipping *Home Accounts 2.0*. Both programs have a clean, Workbench 2.0 look with beautifully presented documentation and a strong array of features. Certainly a fair match for *ProWrite*.

## Installation

An effortless procedure with either program - *ProWrite* uses the tried and tested drag-the-icon method of installation. A simple to use System Mover program is supplied for installing extra fonts and printer drivers supplied on the *ProWrite Extras* disk. *Wordworth* is a little more exotic, using an installation program which shuffles all the right files to the right places. There's also a printer install program which makes sure that right printer driver is in position - *Wordworth* supports Preference drivers as well as its own proprietary library.

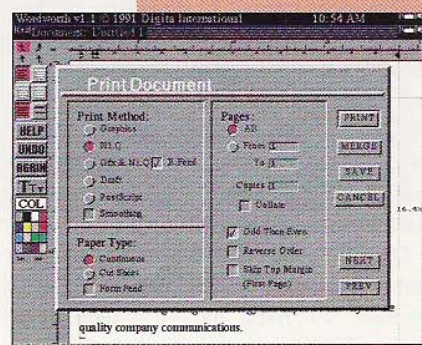
Neither program requires any AS-SIGN commands to be added to your startup-sequence. There are no strange libraries to worry about - just lots of fonts and printer drivers.

## On Screen

Both programs provide a reasonably intuitive arrangement of controls with the usual ruler placed across the top of each document window providing control

**Above:** *Wordworth 1.1* on-screen graphics handling is impressive.

**Below:** *Wordworth's* menu are always clean and attractive.





over TAB settings and text margins. Multiple documents are handled with ease, each opening an additional window complete with sizing gadget and scroll bars. *Wordworth* offers an optional tool box of gadgets along with greater program control of adjustments such as resolution, DPI, colours and an optional left margin ruler.

Although *ProWrite* has finally sorted out the previously limited colour control, setting screen resolutions must still be done from Workbench using TOOL TYPES. *Wordworth* has an excellent range of preset colours - a nice touch for those of us who quickly tire of any one scheme. Both programs will work in up to 16 colours with a corresponding loss of speed. My vote would have to go to *ProWrite* for its pleasant uncluttered layout although *Wordworth* is easier to configure to your own requirements.

### Editing

Moving around text within each program is considerably faster than earlier attempts at Amiga WYSIWYG wordprocessors. However, *Wordworth* is clearly slower than *ProWrite* when using the mouse to highlight portions of text, although it offers more powerful formatting options when it comes to low level adjustments such as tracking and line spacing. In order to compensate for this formatting overhead, Quick Write mode may be enabled, which makes the difference between both programs less noticeable.

I found either package a pleasure to work in. Support for the mouse is good, with a double click highlighting the current word, whilst a third click highlights the whole sentence in *ProWrite* or the line in *Wordworth*. Cursor movement through text is smooth and fast. Inserting and deleting text is marginally quicker in *Wordworth*. *Wordworth's* standard line spacing tends to spread the words more than *ProWrite* making the text display a little more readable.

Scrolling in *Wordworth* is considerably smoother, jumping in single lines, whereas *ProWrite* moves several at a

time, making the display jerky and awkward. *ProWrite* has couple of smart bells and whistles. You can sort paragraphs, turn text into upper, lower or mixed cases and apply or retain formats and styles. *Wordworth* only allows you to cut and paste formats.

Both programs have a wide variety of Insert Items including literals. Overall winner in the options department is definitely *ProWrite*. Both packages have all the usual cut, paste and copy options along with a handy undo function for mistaken selections.

### File Handling

From the file requester, a separate list of files and directories, in alphabetical order, with the directories intermingled, is supplied - along with a second list of devices and volumes, once again in alphabetical order, but this time the devices appear before the volumes. I find having directories mixed with files rather annoying. It makes moving through several levels of directory names rather clumsy.

Both *Wordworth* and *ProWrite* can Load and Save ASCII files as well as their own proprietary format, roughly following the IFF standard. *ProWrite* is supposed to handle *Professional Page* files too, but tests we carried out found this to be too inconsistent to be of serious use.

On the file requester, *Wordworth* has a Format gadget. Select it and you're presented with a host of possible file formats which may be handled including *ProWrite*, *WordPerfect*, *KindWords* and *ProText*, not to mention assorted variations on ASCII. *Wordworth* also has a filter function which can be set to exclude or include only those files matching the filter setting, which is entered in standard AmigaDOS format. The file listing may be optionally sorted - overall, a superior interface whose only downfall is the potential complexity for new users.

Both programs have timed auto-save, auto-backups and optional icons. *Wordworth* also keeps track of when the file was last printed, how much time has been spent editing the document and the number of revisions.

### Formatting

Paragraph formatting is handled in a similar fashion although *ProWrite* has far superior TAB support, with all kinds of justification provided for including decimal. *Wordworth* certainly offers more control over possible line and character spacing, paragraph spacing and assorted other options. However, it scores poorly in the multiple columns department - you can have as many as you like as long as the most you need is one.

*ProWrite* offers sophisticated column control, with up to five in total complete with adjustable gutter. It's these kind of features that start to sound like you could do some serious publishing - however if you plan on importing graphics, formatting becomes a nightmare. *ProWrite* has no support for any kind of text run around graphics. *Wordworth* on the other hand is brilliant. Imported IFF files may have colour zero set to transparent, making possible contoured text flow around the graphic. Once again neither program has an overall lead, so take your pick. Keep in mind, *Wordworth* has just entered the market and still has time to see many features added over coming months. The release we're testing has already seen a large number of features added in just six months. Digita promise to keep upgrading the product.

Eventually, one of these two programs may well make the necessity for desktop publishing software a thing of the past for average business requirements such as simple forms, newsletters and flyers.

### Spelling and Thesaurus

*Wordworth's* spell checker performed flawlessly, whereas *ProWrite* was sometimes faulted by both its American dictionary and it's not so intelligent guessing of what the correct word should have been. *Wordworth's* spell checker is much more pleasant to use, especially when dealing with words not found in the dictionary which are correct. If anything, *Wordworth* may have been a tad slower than *ProWrite* - but then the idea is to get the spelling right - a few extra seconds



doesn't make a lot of difference.

Although *Wordworth's* thesaurus was marginally better when tested with a set word list, both programs offer a powerful look-up facility so you can continue finding new synonyms from each new word list. However, only *ProWrite* enables you to work back down the hierarchy, *Wordworth* can only jump back to the original word.

### Hard Copy

Getting your words onto paper is what wordprocessing is all about. In this area *Wordworth* begins to excel. With its own special printer drivers, quad-density support and full postscript output, the possibilities are impressive. *ProWrite* offers a clean, well arranged output menu, whereas *Wordworth* has the potential to be a little confusing thanks to its large number of options and control. Fortunately print functions are very well docu-

mented.

Getting good looking print out of *ProWrite* requires a good quality printer. Using *WordWorth*, even an eight-pin clunker looks good. *Wordworth* lets you mix graphics and NLQ print using reverse feed option or double loading. The quad-density mode requires the chosen font be available in four times the selected point size. An intermediate mode is also available requiring double the point size.

*Wordworth* supports Workbench 2.0's outline font technology - publishing deadlines didn't allow time to test this feature, however it sounds like *Wordworth* will be head and shoulders above *ProWrite* in this area. Overall, *Wordworth* would be the best choice if you're looking for fancy output. If you're happy with the quality your printer delivers using NLQ fonts, then *ProWrite* would be just fine.

### Documentation

Both programs have professional quality documentation and come packaged in a bookshelf style box that any MS-DOS owner would be proud to have propping up the system manuals. Both manuals are ring bound and due to recent upgrades include separate addendums covering new features. *Wordworth* is further helped by a useful on-line help system ideal for the first time user.

### Conclusions

With two programs as hefty as these, it's hard to cover every feature. In this review I tried to concentrate on the basic functions you expect to be right before a company starts adding the fancy bells and whistles. Both programs have those odd extra capabilities that could make the difference if you're after something special.



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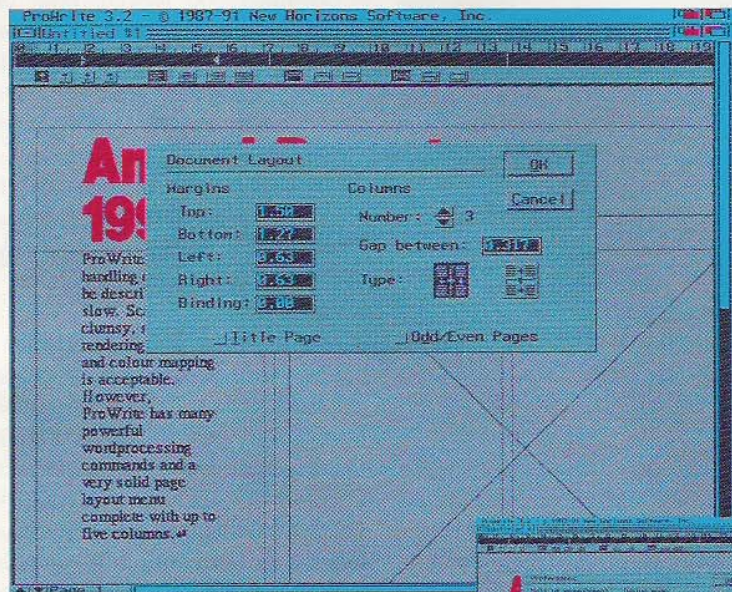
Generally, *Wordworth* and *ProWrite* are very similar in functionality and power. However, there are some key differences. *Wordworth* has far superior graphics handling and offers some interesting formatting controls. Its British heritage mean the dictionary and thesaurus are more relevant to our local custom of speaking the queen's English. It also means the program is selling like hot cakes in the biggest Amiga market in the world - Europe. There's no doubt in my mind we will continue to see *Wordworth* upgraded to become one of the best wordprocessors on any PC platform.

*ProWrite* is a very reliable, slick product which benefits from a long history and a solid, carefully planned series of upgrades. The program performs flawlessly. There are some useful features not found in *Wordworth* and *ProWrite* also sports a full AREXX interface. The ability to work in columns is handy, however like *Wordworth*, it lacks the inclusion of footnotes, a must for serious writing. *ProWrite* could do with some enhancements in the areas of output and graphic handling - at the moment text flow around imported images is completely manual.

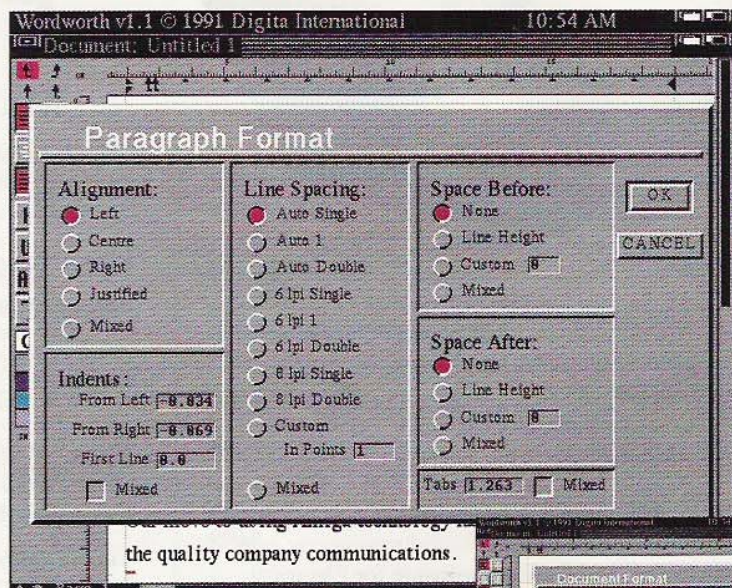
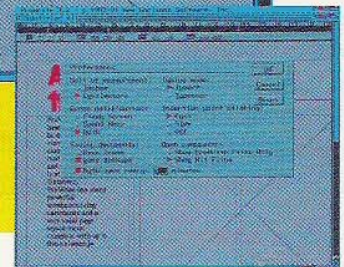
Overall, it's a tough decision to put one above the other, however when it comes to bangs for bucks, *Wordworth* seems to have the edge. On the other hand, *ProWrite* is certainly the smarter looking, more reliable package. Both programs are a credit to their designers and at around \$299 represent excellent value for money.

For more information regarding *ProWrite* call Dataflow on (02) 331 6153 or Computermate on (02) 457 8388.

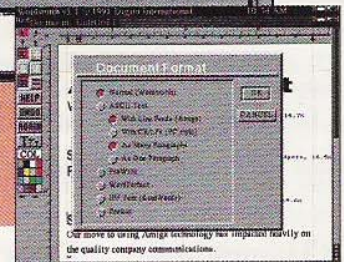
For more information about *Wordworth* direct enquiries to Pactronics on (02) 748 4700.



**Above:** Columns can add a professional touch to any document.  
**Right:** Preferences aplenty.



**Above:** Although there are no columns, there is everything else.  
**Right:** More preferences.





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# The Neriki DeskTop Y/C Genlock

*How do you improve the desktop genlock that started the whole desktop video revolution in Australia? Peter Ward examines the latest offering from Neriki.*

► I once read that Rolls Royce implement changes in their fine series of motor cars in an evolutionary rather than revolutionary manner. The thought behind this philosophy being that "we already have an exceptional product, so let's not ruin it with any unnecessary changes".

When I first looked at the range of PAL genlocks for the Amiga a couple of years ago, the Neriki was the best price versus performance unit available. Rather like a Rolls Royce it was not compromised on quality, but simply did not have as many "lights and buttons" as competing units which were at times, nearly twice the price. The manufacturers of the Neriki, Fordray, have not been idle however.

Video technology has improved since then, and so has the performance of the competing plethora of genlocks available for the Amiga. Accordingly, Fordray have introduced several "evolutionary" changes to their genlocks, which give them levels of performance rarely matched by any other manufacturer, regardless of price.

## What's New

The Neriki DeskTop Y/C Genlock is a good example. The latest model shipped by Fordray externally looks very similar to early models. The same elegant long flat beige metal case. The same chrome toggle switches on the front. There are however, some outward changes. For example, the Y/C plugs are now recessed into the rear of the unit. The rotary fader knob is now black. There is no video loop through or terminate switch. The unit doesn't transcode (change a standard composite video signal to Y/C) anymore. This is a new LED on the front of the unit. With power on only it glows red (not new), however with a valid signal being sent to the LED also glows green (very helpful).

So, apart from some cosmetic changes, how is it any different? Most of the changes have been on the inside.

Criticism has been leveled at the earlier Neriki DeskTop Y/C genlocks as "not being true Y/C". To understand this criticism, one needs to look at how a genlock processes the video information being

passed through the unit. Earlier Neriki and many contemporary "Y/C" genlocks actually process the video signal in composite format, which contains both the colour and brightness information of a video signal in a single waveform. Being a single waveform, it is often subject to "intermodulation distortion" errors, for example, the colour information within the signal gets confused with the brightness information. The Y/C signal is subsequently obtained by transcoding the signal into separate brightness and colour outputs complete with distortions.

Alternatively, some manufacturers process the brightness and colour information individually, which is fine for Y/C only users, but for composite output, the signal is still transcoded prior to output. Either way information is being lost or distorted through the conversion process.

The new Neriki Y/C DeskTop overcomes these limitations of performance by actually having DUAL processing boards. Simply put, within the genlock, one circuit board is dedicated to





processing luminance (Y) and chroma (C) information only, while another board is used only for composite video input and output. Hence, each board can be optimised for the specific type of signal it will be processing. While the genlock will no longer convert from one format to the other, the individual outputs are stunning.

Talking to Warrick Ford at Neriki, I discovered that they employ what is affectionally known as the "toilet principle" in designing their genlocks. Roughly translated it means "rubbish in - rubbish out". The Neriki Y/C Desktop will give better performance with better quality video input, and worse performance with poor input. The bandwidth of the Genlock is however a ruler flat 5.5 MHz, so if you are using the newer Hi-Band Video-8 or Super VHS formats the genlock will more than preserve the quality of your original footage.

### Video Test

I proceeded to examine the output of the genlock in more detail. Looking at the composite side of the genlock, Amiga generated colour bars were well saturated, with little cross colour distortion or uneven colour bands within the signal. The result was recorded in first through to third generation VHS, S-VHS and Video Hi-8mm tapes.

While the VHS tape was looking a bit ratty by the third generation it came as no surprise as so did original footage at the same generation level. The Y/C side of the genlock was impressive to say the least. On live material it was hard to believe you were looking at an encoded

signal, as there was as not a lot of difference between the PAL encoded television output and the Amiga RGB monitor. Both Video Hi-8 and S-VHS dubs recorded well, right down to the third generation and even fourth looked O.K. Screen graphics had real snap and on first generation tape HAM images looked remarkably crisp with little change when recorded to video tape.

Colour saturation held up better when recorded in Y/C as opposed to composite but this again is a function of the tape medium itself.

I was also pleased to see absolutely no Amiga RGB information was "leaking" through to the video source. Earlier Neriki models sometimes gave a slight ghost of Amiga graphics showing through on areas of solid colour in the external video signal. Using either the fader knob or effect switch will now completely remove any graphic from the incoming video. In short the performance was nothing short of excellent.

### Hardware Considerations

Now those of you who are seriously considering purchasing this unit may need to take note of the following. If you are using a Commodore 2091 hard-disk controller you may find you get all sorts of horrendous "read-write errors" with a Neriki genlock attached. I recently upgraded to a 2091 controller, and can vouch for the authenticity of such goings on, so much so, that my Amiga 2500 had been to Computer Tech services in Carlton so many times that my children began to refer to the technician as "Uncle Mark" (which reminds me, thanks for all

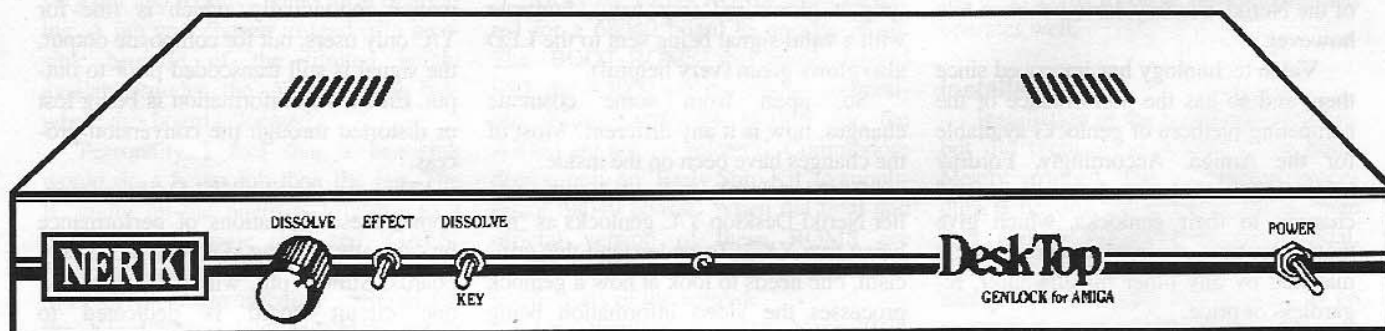
the help Mark).

The problem was solved with the accidental discovery of the revision of the DMAC chips used in the hard drive controller. Use the latest revision and you will not have any problems. Weird things can also happen by way of pixel artifacts on application and workbench screens when using rendering packages like VistaPro and Real 3D, however this may happen no matter what genlock you have attached to your system (I've personally tried models from six different manufacturers with the same result).

Despite initial problems with the 2091 controller, the Neriki unit has since integrated seamlessly into my video system. The genlock is now permanently plugged into a A2500/030, which is connected to an RGB colour splitter which is attached to an MX12 production mixer and so on. So what do I really think of the Neriki Desktop Y/C? O.K, it's the one I still use in my editing suite, and frankly while there are more expensive genlocks around, I can't see myself changing - until the 1993 model arrives.

### FACT CHART

<b>Category:</b>	Genlock
<b>Product:</b>	The Neriki DeskTop Y/C Genlock.
<b>Comments:</b>	Good performer as well as being value for money.
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*Often misunderstood, more often flagrantly ignored. Daniel Rutter explains.*

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Note that this prosecution is only possible if the laws of the country in which the copying takes place or into which the software is imported do not permit copyright infringement. Some south-east Asian countries still have no copyright laws - they didn't sign at the UCC. It is common practice for vast piracy establishments to set themselves up perfectly legally, selling very cheap software and photocopied manuals to tourists who subsequently (and illegally) take it home.

The fine in Australia for software piracy stands in the vicinity of \$50,000 per item copied. In recent years the Police have taken a strong interest in copyright infringements within the computing world. Buying pirated software from your local dealer, through the Trading Post or even swapping with friends is illegal and could get you into a lot of very expensive trouble. Several Bulletin Boards in Australia have been closed down by the Federal Police in recent months, with all equipment confiscated.

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To confuse this issue somewhat, the industry has adopted numerous terms to describe different peoples attempts at altering this basic definition of freely distributable software.

Some software authors state that their program may not be modified or sold commercially, but that the software is still free - thus the term Freeware. Whether such restrictions would hold weight in court is questionable. Shareware is covered by copyright, and is in fact commercial software. The only difference is that the distribution takes place through public domain channels. Users pay if they like what they see - difficult to police at the best of times.

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# ATOnce IBM Emulator

*There's still some of us who must run IBM compatible software from time to time.  
As George Kimpton fund, the ATOnce is one of the best options around.*

► By the time you read this Christmas will have come and gone. Some of you will have found a few extras for your Amiga under the tree and some will have been fortunate enough to get an Amiga for the first time.

You may wonder at this pre-occupation with Christmas on my part. Well I have just spent the last few weeks working as a consultant for Commodore in Grace Brothers, Harvey Norman, Norman Ross and Bing Lee, talking to people and demonstrating Amigas. The interest in Amigas has been building up for Christmas, but what amazes me is how little people really know about the Amiga and what it can do. This is also brought home by those whom I visit in my capacity as consultant.

When I mention the fact that the Amiga is quite capable of emulating MS-DOS or even the Macintosh, people usually are astonished. Just over a year ago I wrote about the KCS Power PC Board, designed to make the Amiga A500 oper-

*“When I mention  
the fact that the  
Amiga is quite  
capable of emulating  
MS-DOS or even the  
Macintosh, people  
are usually  
astonished”*

ate as an MS-DOS machine. This board was imported by Fonhof Computers. Well John Fonhof has done it again. He now imports the superior Vortex ATOnce Plus. These days service goes along way - Fonhof were most helpful in arranging a review unit along with an afternoon of demonstrating the product.

## Installation

The ATOnce is a little bit more difficult to install but with a little care most people could handle the task. The ATOnce does not plug into the underneath expansion slot of the A500 like the old board, leaving the slot free for memory expansion.

To install the hardware, you need to open the casing of the A500 with the special star shaped screwdriver. You then carefully prize the CPU from its socket following as the pictures in the manual. Plug in the extension socket in, then the ATOnce board and finally replace the CPU chip in the space on the ATOnce board.

Care must be taken with handling the CPU chip to avoid damage from static electricity caused by nylon carpets - if you've ever been zapped, you'll realise the damage these little spark could cause a sensitive silicon chip. Remember also that if your computer is under warranty, installation may void your warranty.





That's about all there is to it, except for tying down the extension socket with some nylon ties as a precaution against movement as the board is cantilevered on the socket. Earlier models without the ties had occasional problems with some A500 computers, possibly ones subject to a lot of movement or vibration. John assures me there are no problems now using the ties.

The actual installation is well covered in the manual with very clear photographs showing the few steps necessary. The only possible problem you may strike, and this will be familiar to anyone who has tried to plug in a chip, is that some pins on the CPU or board may not line up exactly with the socket (Murphy's Law) and could be bent if you are not careful. With care this will not be a problem, just be gentle and take your time.

### Up and Running

Installation of the necessary software is simple - boot up on the ATonce system disk instead of the Amiga Workbench. When the window opens you are given the choice of selecting floppy or hard disk installation.

Again this is pretty straight forward. With the hard disk you are told the command to type in and the necessary files are automatically copied onto the hard disk. With the floppy you are presented with a selection of menus which allow you to set the graphics mode and colours and so on. The chosen defaults are then saved for future use.

From this point if you click on the Emulator icon you are up and away in MS-DOS, ready to run the program of your choice. While you are running in MS-DOS, it is still possible to multitask with the Amiga side providing you have set up the ATonce preferences right and you have sufficient memory for your needs. There will be a small loss in speed however during multitasking.

Changing operating modes is a simple matter of using the usual Amiga screen changing key arrangements of left Amiga key + N or M key to flip backwards and forwards. In the Amiga mode the ATonce is transparent and will not affect normal.

### Specifications

The board is 105 mm. X 135 mm. and is fitted with a 80286 chip running at 16MHz, a socket for a 80C287 co-processor and has 512k of fast memory on board. Expansion RAM fitted to your Amiga may be used as extended RAM. The ATonce board already has 512K fitted. A test run with a 2Meg AX-RAM board in the underneath expansion slot worked fine, also allowing the Amiga clock to be used by the emulator.

The ATonce uses Surface Mount Technology to give low power consumption and uses a highly integrated Gate Array with embedded Interrupt Controller and Memory Management Unit. The emulator works with autoconfiguring autobooting Commodore compatible hard disk systems that use an AmigaDos compatible hard disk driver. Individual

assignment of DOS-partitions is possible. DOS can be booted directly from your hard disk.

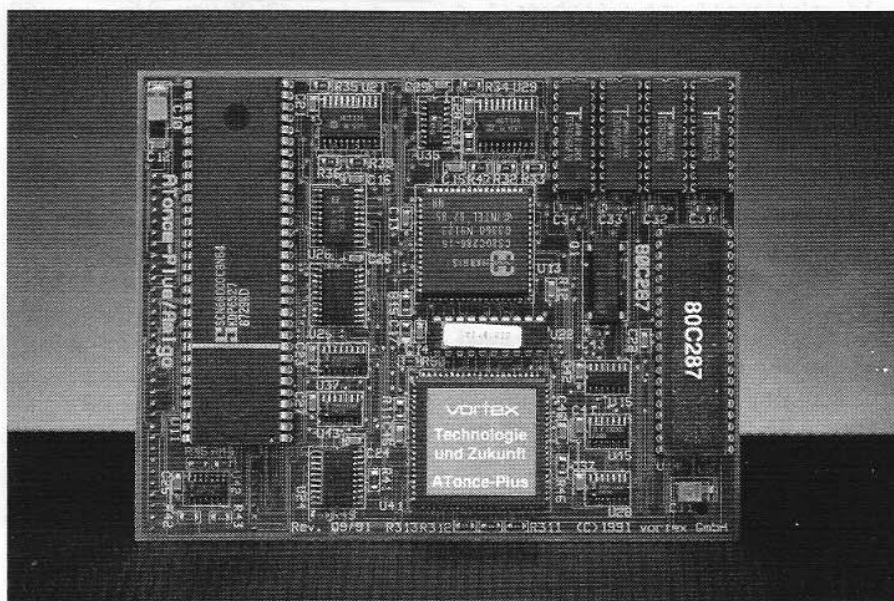
ATonce allows for complete integration of the internal 3.5" disk drive as a 720KB DOS drive. External 3.5" and 5.25" disk drives are also fully supported. Video emulations supported include EGA/VGA monochrome graphics, CGA with 16 colours, Hercules, Olivetti and Toshiba 3100 (these last three modes use interlace).

MS-DOS versions from 3.2 to 5.0 as well as DR-DOS 5.0 and 6.0 will work fine. It also allows you to use the Amiga mouse as a serial Microsoft mouse on either COM1 or COM2.

ATonce comes with a comprehensive manual and two disks, one in Amiga 720k format and one in MS-DOS 720k format. This last disk contains information which must be copied to the MS-DOS side of the system. The MS-DOS itself is not included. MS-DOS 5.0 if used has the ability to load MS-DOS in high memory so maximum program memory is available and also include the DOS Shell.

You are also supplied with two programs, one is A2P which allows you to copy data from the Amiga side to the PC side and the other is P2A which allows the opposite.

*“While you are running in MS-DOS, it is still possible to multitask with the Amiga side!”*







### Software Emulator.

At the Amiga's launch there was an amazing sight - not only could this machine play digitised stereo sound but it could emulate an IBM PC through software. A program called *Transformer* poked its head above the covers for a look at the world, then it seemed to disappear until recently. Although a software emulator could never be expected to perform as elegantly as a hardware based emulator, surprisingly it gets the job done - Lotus 1-2-3 will run. *Transformer* in its current state operates the same speed as an original PC, that is 4.77Mhz - very uninspiring performance.

More impressive however, is a shareware package from New Zealand called *IBeM* - the demo version of which is available from most good PD libraries. *IBeM* is an AT emulator that supports a hard drive partition and CGA graphics - pretty good for \$35.

One problem that people run into is the issue of a system disk. MS-DOS, just like the Amiga, needs a system disk to boot the machine. For the Amiga you need *Workbench*, for MS-DOS you need a *bootable DOS* disk. Since this system disk is NOT public domain it cannot be included with hardware or software based emulators free of charge. An emulator will give you the bare machine - you still need an operating system and software to run on it. MS-DOS is

available from most retailers, an older version such as 3.3 or 4.01 should be available for under \$100.

### How do I exchange my data?

Now that you have your MS-DOS emulator up and running you would probably like to exchange data between the two platforms. Public Domain to the rescue again. *MessyDos*, as the name implies, allows the Amiga to read, write and format 720K MS-DOS 3 1/2 inch disks in the standard Amiga floppy drive.

*Transformer, IBeM and MessyDos are available from Prime Artifex on (02) 879 7445.*

### Performance Tests

In tests the A590 Hard Drive was found to be a little bit small in size at a mere 20MB when you split the capacity into two 10Meg partitions - one for Amiga and one for MS-DOS. Remember Windows needs several Meg of disk space just for itself. Add a couple of other programs and where do you put your files.

So the Hard Disk test was carried out using an updated 590 drive which had been boosted to a 100Meg Quantum SCSI. John assures me the change is easy. With this drive and 2Meg of RAM fitted the board was put through its paces using a 50Meg MS-DOS partition. A test was also carried out using the 52Meg GVP series II hard drive fitted with 4Meg of RAM giving a base of 640k and 4Meg of extended memory with a 10Meg file partition.

On the floppy side I tested a standard A500 Amiga with 512k RAM expansion in the underneath slot and one external drive. With this configuration I had no real trouble.

Setting up the drive can be done in two ways: (1) reformat the hard drive into two partitions, one for the Amiga and one for the MS-DOS but remember to back up your files and programs first. (2) Make a file partition, the Amiga will see this as a large file but the MS-DOS will see it as drive C:

The advantage of the second option is that you do not have to reformat your hard drive but it is slower than a proper

*“Windows V3.0,  
WordPerfect  
V5.1, Lotus V3.0  
and Harvard  
Graphics came  
through with  
flying colours.”*

partition.

A performance test using Norton gave a performance figure of an reasonable 16.2 using. This means it is 16 times faster than the XT. A Benchmark test using plots of some fairly complex mathematical formulae showed increases in running speed of up to 10 with the co-processor, depending on the type of maths used. The average was 7 times faster. In other words it's just the same as a *real* 286 running at 16Mhz.

Compatibility with games cannot be guaranteed but tests with Windows V3.0, WordPerfect V5.1 or Lotus V3.0 with Harvard Graphics came through with flying colours. Telix also performed and allowed us to use the Paragon Bulletin Board. No problems here, it worked like a charm.

### Conclusions

To be frank, if you must slum it with MS-DOS, as unfortunately some of us must do from time to time, then short of buying an IBM compatible this is definitely the way to make your Amiga work in the MS-DOS mode. It opens the door to the thousands of programs available for the IBM at a cost which is very reasonable. There will be an ATOnce-Plus for the A2000 in the near future. The current version is only for the A500.

### FACT CHART

<b>Category:</b>	Emulator
<b>Product:</b>	ATOnce-Plus
<b>Manufacturer:</b>	Vortex
<b>Retail:</b>	\$499.00
<b>CPU:</b>	80286-16Mhz
<b>NortonSI:</b>	16.2
<b>DOS:</b>	from 3.2 up to 5.0
<b>Disks:</b>	One
<b>Memory:</b>	512Kb inc.
<b>Ideal:</b>	3Mb+ (for MS-DOS) Hard drive
<b>Comments:</b>	Best value hardware based MS-DOS emulator.
<b>Distributor:</b>	Fonhof Computer Supplies
<b>Telephone:</b>	(02) 639 5995



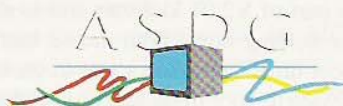
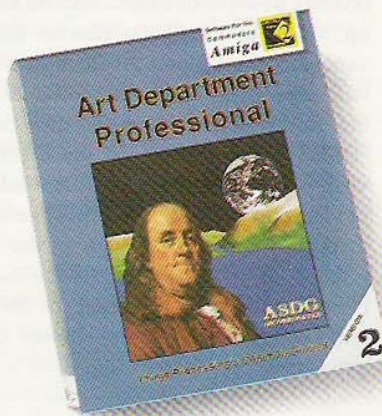
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# Workbench 2.04 Hints and Tips

*This issue, we kick off a new regular column by Nic Wilson containing a wealth of hints and tips for Workbench 2.0 and Amiga 3000 users.*

## Bootting 1.3 by Default

This works so long as you have separate 1.3 and 2.0 partitions, the same as the Amiga 3000. Launch the HDToolbox program in the Tools drawer and select partition drive. Click on your 2.0 and 1.3 partition in turn and select Advanced Options. In each partition you will see Boot Priority. The 2.0 will be 1 and 1.3 will be 0. Swap these over by clicking in the gadget and deleting the number and typing in the new number. Go back to the main menu and select Save Changes. Power down and power up again and your 3000 will now boot 1.3 by default. Good for game players (Hang on, game players don't own 3000s do they?). Thanks to Tony Day for pointing out this little tip.

## Good-bye CD CLI Command

Yes, two fewer key presses in the CLI. All you need to do to change to a new directory is type in the path for the directory, no CD required! It's just a bit difficult to unlearn old habits.

## Where Has the Control-D Break in Gone?

Some users have asked me how to break into the startup-sequence in V2.04. The old Control-D hasn't been removed,

it will only work if the initial DOS window opens. On V2.04 this window will only open if some program actually writes to it or a 1.3 disk is booted. This enables booting to be much faster. So how do I break in if it doesn't open, I hear you ask.

Well this is still possible but has been placed in the BOOT MENU, accessed by holding down both mouse buttons at boot up. Once in the menu choose the advanced options menu. At the bottom you will see a gadget allowing you to disable the startup-sequence. After this choose 'USE' and then click on the drive you wish to boot from. This will normally be the hard drive 'WB\_2.x:' the system will then boot and stop as soon as the DOS window is open. Screen resolution and colours will be chosen from the old system-configuration file or default if not existent.

## V2.04 Boot Menu

There seems to be quite a bit of confusion over this function. The boot menu is part of V2.04 kickstart and is enabled by holding down both mouse buttons at boot time. This allows you to choose the device to boot from, any one on the list is acceptable. The advanced options menu allows you to enable or disable any cur-

rent bootable device, for a single boot only. It also allows the startup-sequence to be disabled as mentioned earlier in this file.

The Boot Menu is not specific to the A3000 but is available on any Amiga using V2.04. Using the option to boot another device allows you for example to boot from a different floppy, but note that some games may have a problem with this. Unless they go through the operating system for loading they will still try for the disk in DF0: as many games use the Amiga's hardware for disk loading.

## Running 2.04 and 1.3 From Hard Disk

The A3000 makes this very simple and it can swap between any number of kickstarts very easy. I have written a small utility called Mousewarn to make it even easier. Below is an example startup-sequence that will allow you to swap Kickstarts if the left mouse is being held down while booting. This means that if 1.3 is currently running then it will switch to V2.04 and stay there each boot until you once again hold down the left button, it will then swap back to V1.3 and remain and so on. The startup-sequence is very simple and is commented so you can see exactly how it works.





See figure 1

This makes changing kickstarts painless. MouseWarn can also be used for many other reasons. Contact me if you have any questions regarding this. I am currently working on software that will allow a choice of Kickstarts from cold boot depending on partition priority, similar to how the A3000 does it.

### Multiple Menu Selection

Up until the latest version of V2.04, multiple menu selection was not implemented. This meant that if you wanted to select two or more menu items from workbench, you had to do them one at a time. The latest version (37.74 - 37.175) now supports it. For example, you can select 'Show All Files' and 'View by Name' all in one hit.

### Better Multitasking

One of the fruits of version 2.0's better multitasking is that if you open a disk icon and then change your mind, you no longer have to wait until all icons have appeared before you can close it. You can now close it immediately. I find this ability very handy indeed!

### Quick Workbench Format

The new version of kickstart has added the format quick option to the format from the workbench menus. Great for quickly blanking a disk from the workbench without having to go into CLI. (A quick format requires a previously formatted disk. The quick optionally merely sets all the disk directory information and space available maps back to empty.)

### New Denise Offers More Display Modes

V2.04 has new resolution modes similar to high-res interlace but without the flicker. These modes require that you have the ECS chip set, consisting of AGNUS 8372A and DENISE 8373. AGNUS is currently being shipped in all Amigas. DENISE is not, but is available by ordering it from your local dealer. It is pin for pin compatible with the older chip so you can just exchange

```
MouseWarn
if warn
version >nil: graphics.library 36
if warn
zkick kickstart
endif
killzkick
endif
```

```
version >nil: graphics.library 36
if warn
execute s:startup-sequence1.3
endcli
endif
execute s:startup-sequence2.0
endcli
```

FIGURE 1 - Dual Startup

```
;is left mouse being held down
;sets warn if so
;is current version of GFX V2.04
;if not V2.04
;then swap to kickstart 2.0
;end for the if statement
;comes here if V2.04 swap to 1.3
end for the if statement
```

```
;comes here if not mousewarn
;and tests GFX for V2.04
;if not then execute 1.3's start
;make sure it ends
;end for the if statement
;it must be V2.04 so do its start
;make sure it ends
```

it. These modes also require a multiscan or VGA compatible monitor, such as the Commodore 1950. My program SysInfo will identify which chip set your Amiga has if you are not sure.

### Hidden ENDCLI in V2.04

Did you know that there is a keyboard short cut for the 'endcli' command? Try using Control while in a CLI window!

### Don't Forget FFS

We have all been using fast file for our hard drives for ages. Are you aware that the FastFileSystem is now in kickstart in V2.04, and can be successfully used on floppy disks even to boot them? Try it, it works fine. Formatting and installing is the same as if it were a hard disk. Use the FFS switch on the format and install commands.

Hard disk users that are switching over to V2.04. You will not find FastFileSystem in the L: directory as you would expect. Delete the FileSystem line entry in the mountlist for your drive. The DosType line entry tells the Amiga the file type to use, and this should read DosType = 0x444f5301. This line is also required under 1.3 to allow diskdoctor to operate correctly for FFS.

### Static Column Mode RAM Chips and Ramsey

If this new type of RAM is used then Kickstart is supposed to automatically check and set bits in Ramsey accordingly. Kickstart version 37.175 does not set the static column bit in Ramsey. I have found that if static column is enabled by itself, you get an increase in speed of around 20%, if burst is enabled by itself then the speed increase is around 15%, and if both are enabled the increase is 11%.

I cannot explain this as yet but I am attempting to find out. Commodore recommend the use of burst mode only. I have also found that later revision A3000's have hard disk problems if the static column bit is enabled.

This is obviously the reason that Kickstart doesn't enable it. When it will be fixed I do not know.

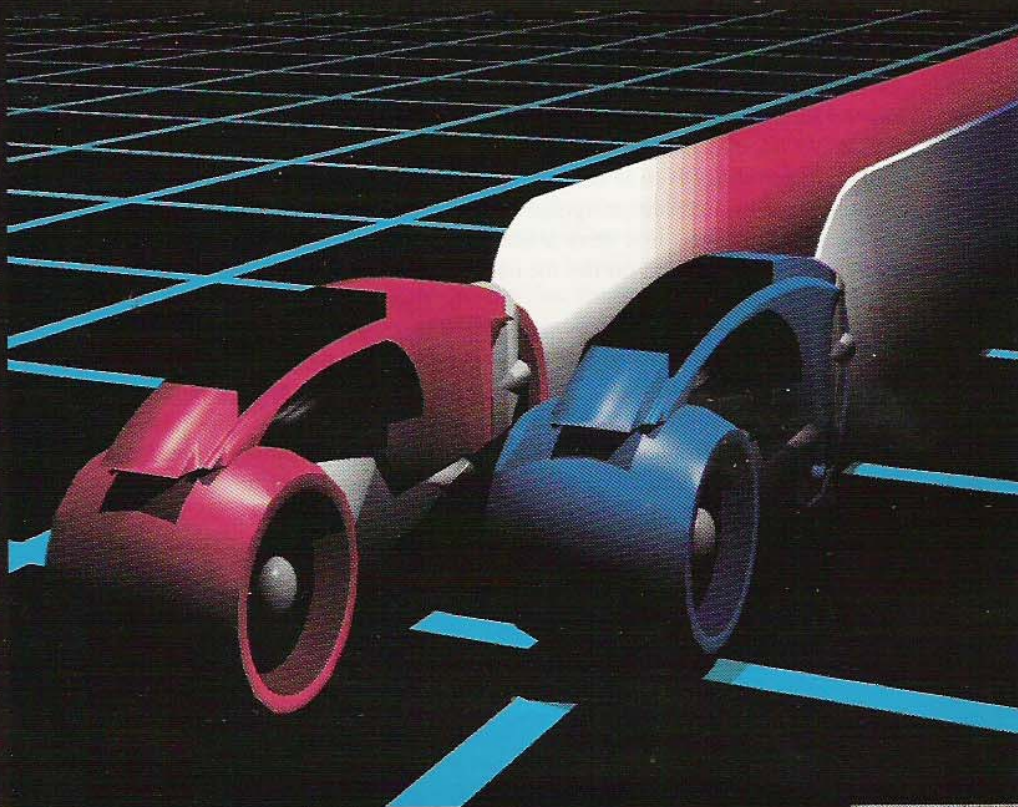
I spoke to Dave Haynie at Commodore and he stated that the problem is not the hard drive, but a bug in the hardware of the Ramsey chip. Ramsey is not refreshing the memory correctly in static column mode and this causes data loss and eventual crash.

If you have an A3000 that works with static column mode enabled as mine does, then consider yourself very lucky as most A3000s will not work.

(Continued on page 54)



# The Art



## Left Hand Page

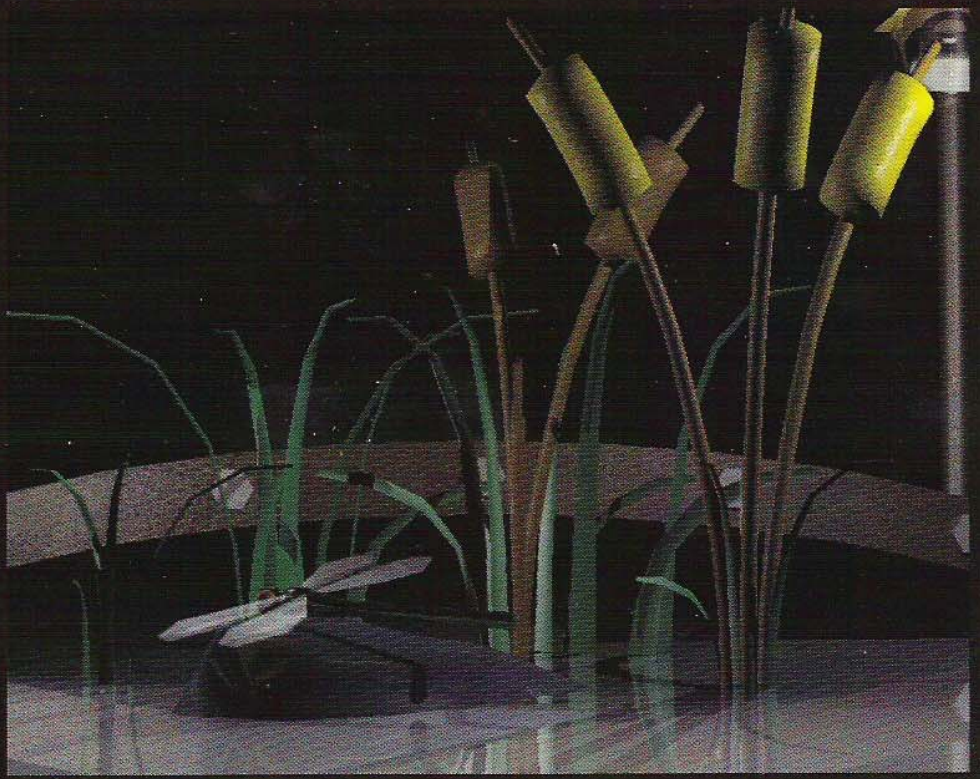
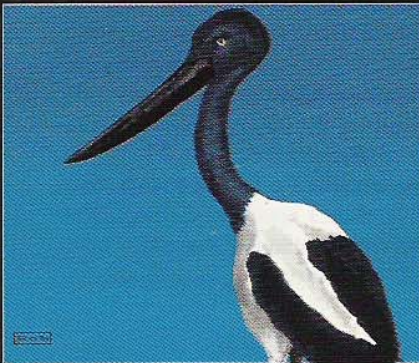
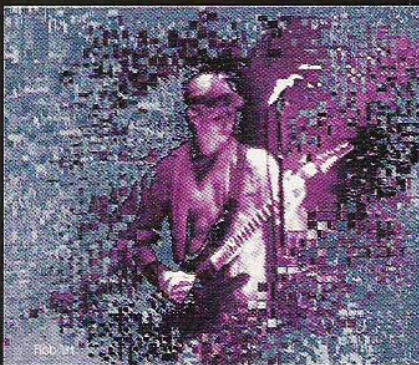
- Top left** ▶ *Dolphins* by Robert Bruce of Queensland  
**Top right** ▶ *Oranges* by Andrew C. Thomson of Victoria  
**Left** ▶ *Light Cycles* by Mark J. Johnson of Western Australia

## Right Hand Page

- Top** ▶ *The System* by Andrew C. Thomson of Victoria  
**Top right** ▶ *Nankeen* by Robert Bruce of Queensland  
**Far right** ▶ *Willy* by Mark J. Johnson of Western Australia  
**Left** ▶ *Shane* by Robert Bruce of Queensland  
**Bottom left** ▶ *Jabiro* by Robert Bruce of Queensland



# Gallery







### Adding A Second Hard Drive to the A3000

Those users wishing to do this may find that there is only one power connector for hard drives, and that is used by the internal one. Dick Smith Electronics sell a double adaptor that will suffice for this job. Catalogue number X2604 Price \$6.95. They also sell a power adaptor cable to convert the large size power cable to the small 3.5 inch type. Catalogue number X2605 Price \$6.95

### Any Kickstart on A3000

Remember the old kickstart hand on the A1000, Wanna see it on the A3000 and boot any old kickstart. This is very easy with the SetCpu command. This command is available on the Fish 400. The syntax for this option is SetCpu kickrom df0: although a different drive can be used if you wish. After a few seconds the Kickstart hand will appear. I tried booting up on a Kickstart 1.2, and then a Workbench 1.2 and it all worked fine. This may be handy for some older games. Beware of the old SetClock command on these older disks, it causes a Guru on the A3000 so comment it out of any startup sequence. I have tried it on another model Amiga with a 68030 processor and 68020 that has a 68851 mmu (A2620 card) and it worked.

#### FIGURE 2 - Patches for 'Noclick'

A3000 Kickstart 1.3 V34.5 no-click patch  
Block 332 Byte 69 Change \$6B to \$EB

A3000 Kickstart V2.0x V37.74 noclick patch  
Block 459 Byte 45 Change \$6B to \$EB

A3000 Kickstart V2.04 V37.175 nolick patch  
Block 459 Byte 95 Change \$6B to \$EB

Kickstart File V2.0x V37.74 no-click patch  
Block 839 Byte 135 Change \$6B to \$EB

Kickstart File V2.04 V37.175 no-click patch  
Block 639 Byte B9 Change \$6B to \$EB

### Patching Kickstart for Permanent Noclick Operation 'the naughty way'

I recommend the use of the FileZap program or such like hex file editor for these patches. There are three patches, the first two are for the A3000 kickstart files that can be found in the DEVS: directory of each of the WB\_2.x: and WB\_1.3: partitions.

Ensure that you are using the named versions of kickstart though. If you are unsure then use the Workbench menu 'About' or 'Version' to find out, or alternatively you can use my SysInfo program. The last one is the kickstart file that is supplied for using V2.04 on another Amiga. See figure 2.

NOTE - Users that use ZKick to load Kickstart will have to use the -nochecksum switch to make it work, as the change invalidates the checksum of the kickstart.

### Software Cold Boot

If you decide to switch to a different Kickstart on the A3000, turning off the power switch and then on again is a real pain. To overcome this I wrote a small utility, I call 'REBOOT'. It resides in the C: directory and simply reboots the A3000 back to cold. This allows you to hold down both mouse buttons and go to the kickstart menu. It works for both V1.3 and V2.04. This program is public domain and available from myself.

### Unknown bug in Kickstart 1.3 now fixed in V2.04

A small bug in KS1.3 that most users and programmers thought was a feature has now been fixed, although I preferred the bug personally. Under KS1.3 if a string gadget was selected on a window that had menus with keyboard short cuts, you could still select and use the keyboard short cuts, while the string gadget was active. This was actually a bug and should never have worked and you will find under version 2.0 that it no longer works. You have to select the menu with the mouse while a string gadget is active.

### Setting NTSC mode on V2.04

A few users have asked me this and it is not immediately obvious nor is it explained anywhere. To do it is simple. Open the monitorstore drawer and double click on the NTSC monitor. Then go into the screenmode program in prefs, you will see that all your screen modes are now prefixed 'PAL' and in that window further down you will find NTSC ones. Choose an NTSC one and select use. These modes are great for testing programs in NTSC mode.

### Default Icons in V2.04

Another feature of V2.04 that is rather obscure is default icons. As most users know, when a disk with no icon is placed in the drive a standard disk icon will appear for it, also when 'Show all files' is selected from the workbench menus default icons appear for all files that do not have an icon. Did you know that you can easily change these for your own settings?

It is very easy to do. Launch IconEdit in the tools drawer and drag an icon that you wish to become a default on and dump it in the window of IconEdit. The icon image will appear in the window, from the menu select 'Save as Default Icon' and thats it. Next time you reboot this icon image will be used as a default one for that icon type.

### Change to Cache and Burst in 37.175

Because of problems with some accelerator boards, cache and burst modes for 680x0 processors I no longer set automatically in the latest version of V2.04. This may not be readily apparent to most users. A new supplied version of setpatch turns on the cache modes but not the burst. To set these on I suggest using CPU or SetCpu in your user-startup script file. If you neglect to do this then your system will perform at less than its capability.

### Startup-Sequence Considerations

Many users I speak to are still customising their startup-sequence in V2.04. I strongly recommend against this. New





functions of V2.04 have made this unnecessary. The standard startup-sequence for V2.04 has undergone quite major changes since the early beta test versions and still are changing. If users are not using each new one when supplied then they are not picking up the change automatically. The startup-sequence calls a script file, if it exists called `s:user-startup`, this is the script where you can place all your changes that you would normally place in the startup-sequence. Commodity type programs can be dragged into the 'wbstartup' drawer.

V2.04 startup works somewhat differently than older versions. If every command in the startup-sequence does not send any output to the screen, the AmigaDOS will not bother opening the initial CLI window. The first screen to appear will be the Workbench Window. In order to do this, send any output from and command to `nil`.

Remember that commands like 'run' send output in the form of '[CLI x]'. Your startup may have a command like 'run iprefs', this would change to 'run >nil: iprefs', to stop the output. All this is worth while, even on an A3000. My startup sequence speeds up by 90% by forcing all output to `nil`. This initial CLI window can also have effect on the iprefs command. If your startup-sequence brings up a requester stating 'Close all windows except Drawers' then eventually goes away by itself, by preventing the initial CLI from opening will cure this. This happens because iprefs tries to set your prefs and then change to your saved resolution etc. If there is a CLI window open it cannot do this and brings up the requester.

### Alphabetical Sort from Workbench

If you are looking for a specific icon or program from Workbench in a drawer with zillions of files. Then multiple select all of the files and then 'UnSnapshot' them. Close the drawer and re-open it and choose 'Clean Up'. The icons will be repositioned in alphabetical order.

### Workbench Fake Icons with the Show All Function

When 'Show All Files' is selected from Workbench, 'fake' icons will be given to each file. If you look at your S: directory for example you may notice that it gave 'TOOL' icons to your script file instead of 'PROJECT' icons. This is because the 'e' flag is set on your files. Use the 'Protect' command to unset the 'e' flag on non-executable files and the correct icon will be given to those files. To unset the 'e' flag on all files in the current directory use 'Protect #? -e'.

### Adding a second A3000 internal drive

The later A3000s (ie. MINE) came with the second drive mounting kit inside it. A standard A2000 drive (A2010) fits this mounting kit. The screws were in a little plastic bag stuck to the mounting frame. Change the jumper located at the back right hand side of Agnus to make the Amiga aware of the drive. The eject button on this drive is different to the standard A3000 drive, but this eject button is available as a spare part from your local ComCare centre for a few dollars.

### How Fast is the 3000?

You can run many benchmark programs including my own SysInfo, but how fast is it in real time? We ran a test program that had to search through 2.5 megs of ASCII code to find particular labels in an assembler source code and then re-read the file for each 2600 labels to see if they had been used. After trying this test on many different files the result was approximately 600% increase in speed.

Source Code	A2000	A3000
NoVirus	45.2s	5.8s
AutoCLI	25.0s	2.7s

This is an extremely worthwhile increase in speed. The assembly time of NoVirus is also a useful test. On the A2000 it takes 2.5 minutes to assemble, on the A3000 it takes only 25 seconds.

None of these tests used the on board Maths Co-Processor.

The 28 Meg GVP accelerator card for the 2000 does beat the A3000 which only runs at 25 Meg, but ONLY while work-

ing in FAST ram. When any CHIP memory access is done the GVP card slows drastically to be less than ninety percent of the speed of a standard 500, the 3000 on the other hand still manages to be 3.6 times the speed of a standard 500 when working in non fast RAM areas.

The hard drive is the fastest I have ever seen on an Amiga. On a drive that was 35% full and using Diskspeed 3.1 and DiskPerf from the Fish disks both gave similar results. A3000 Hard disk performance results:

*Reading 1.3MB per second*

*Writing 1.0 per second.*

GVP claim that their card with the AT drive performs at these speeds, but no matter how we tried, and using the actual drive they mentioned and their latest software, we could not even approach half that speed, in fact the only other SCSI card that comes any where near it is the Trumpcard 16 bit - it gave 640k read and 520k write.

### Commodore's 68040 Card Gossip

This is no longer gossip but printed fact. In the instruction book for the Progressive Peripherals and Software 68040 card, they make the following statement in regard to the supplied software. "68040.LIBRARY - This Library, provided and Licensed from Commodore Business Machines, is activated by the "SetPatch" command. This library is SIMILAR TO THAT SHIPPED WITH COMMODORE'S '040 CARD..."Now isn't that interesting! Commodore do have an '040 card. I wonder if it is an A3000 or A2000 card. I wonder if it is called the A2640. If you like sticking to genuine Commodore peripherals, it looks like you may not have too much longer to wait.

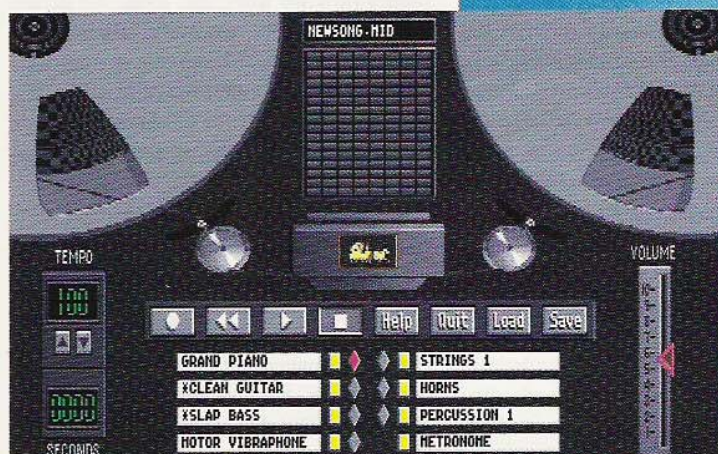
### Next Issue

- Setting up your hard drive
- A3000 enhancement kit
- Getting games to work on your A3000
- The A3000 - a year later

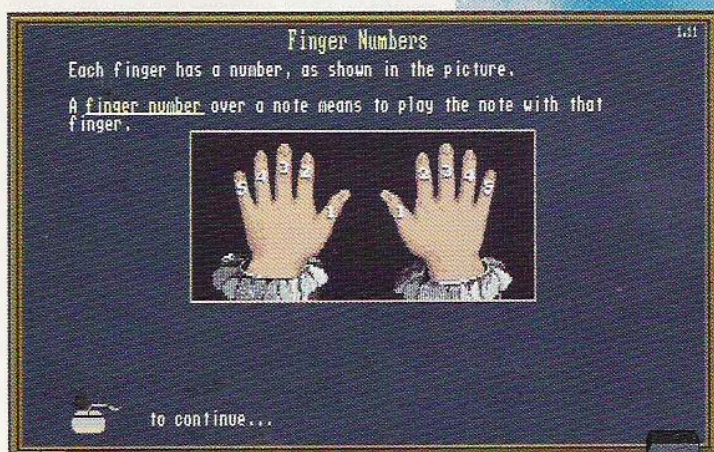




The main menu screen - The Miracle supports multiple users.



Create your own seven track recordings using a vast range of available instruments.



The Miracle takes you step... by step.

# M Piano

*An amazing or wonderful event, or a marvellous example of something, whichever definition you choose, the Mindscape distributed Piano Teaching System is certainly worthy of the name. Daniel Rutter and Andrew Farrell put it to the test.*

► Teaching yourself piano may sound hopelessly difficult. Teaching someone else can be even more daunting. However, take the patience of computer teaching software and integrate a small but functional piano keyboard and you have the Miracle. A solution to learning piano simple enough for any Joe Couch Potato to follow, but entertaining enough to hold the interest of most ankle biters.

The Miracle was launched at the World of Commodore Show in July last year. At the time, only the MS-DOS version was available. At the official launch during one evening of the show, reptiles of the press were treated to the sort of generosity that has become a rarity since these harder economic times have come upon us. A jolly night was had by all, and everyone left feeling quite good



# miracle

## Teaching System

about the Miracle.

At the Commodore show it was a different story, with only the PC version on display beneath a giant Cecil B. de Mille Ten Commandments cardboard marble arch and CDTV players glistening in the distance. Miracle demonstrators pumped out bar after bar of Ode to Joy whilst nearby stands rocked Darling Harbour with animation demo reels sporting the latest house music blaring out at umpteen hundred watts. It would be fair to say the Miracle had to compete for the attention of passers by. Nevertheless, anyone could see that the system had a lot of promise.

### The Keyboard

Inside the hefty packaging you'll find a small four octave keyboard, with two on-board speakers. The keys have velocity sensitivity, meaning the harder you hit, the more noise it makes. Beneath the matte black exterior are some 128 on-board sounds, 8 channel multi-timbral capacity (so you can play 8 different instruments at once) and 16 note polyphony (so you can play 16 individual notes simultaneously). The Miracle supports split keyboard mode enabling you to play

different instruments on each half of the keyboard.

At the rear of the unit there's a MIDI (Musical Instrument Digital Interface), in and out sockets, a sustain pedal connector and a special port for hookup to the computer. A headphone socket is sup-

*"The technical specifications of the keyboard are truly remarkable for the price."*

plied, presumably so parents can avoid hearing Chopsticks for the 498th time. Power is supplied by an external plug pack. An optional stand and assorted other accessories are available. For the moment, our keyboard is balanced on the edge of one of the office desks.

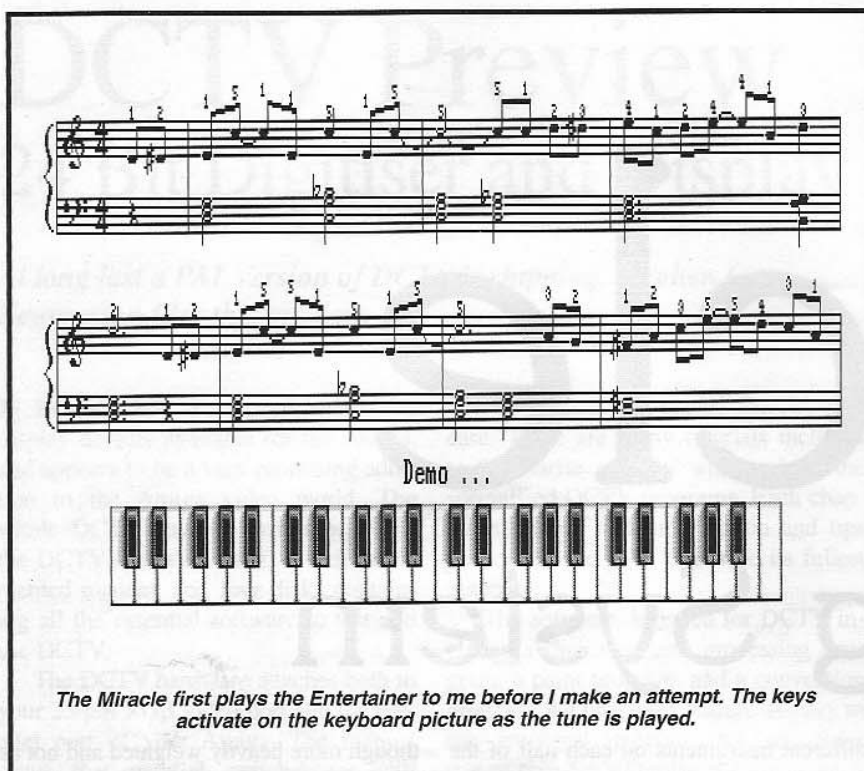
The keyboard is made by Roland, and feels reasonably similar to the now rather elderly Roland D5 synthesiser, al-

though more heavily weighted and not as sturdy. It's obviously not designed to survive use with a band, nor need it be. A D5 on the other hand will tolerate enormous slams on the keys without missing a beat; the Miracle would come to bits with alacrity under such punishment (not that we were brave enough to test this thoroughly). The velocity sensitivity is fine, not astonishing but perfectly functional.

There is no after touch sensitivity - after the note has been struck, subsequent changes in finger pressure do nothing, as is the case with all cheaper keyboards. There is no bender lever (the little wiggly bit that lets you shift the pitch of the sound while playing), which is just as well on a machine designed for teaching kids.

Serious musicians will agree the range of the keyboard makes it virtually useless for truly involved playing; five octaves is basically the standard for small synths today, with seven or eight on bigger models and real pianos. Fine for the absolute beginner and a few stages above that, but this size keyboard is really only found on little almost-toy keyboards by Casio and suchlike.





Demo ...

The Miracle first plays the Entertainer to me before I make an attempt. The keys activate on the keyboard picture as the tune is played.

The technical specifications of the keyboard are truly remarkable for the price. By comparison, the Roland D5 is an eight-part multi-timbral, just like the Miracle, but also features a drum track, making nine in all. The D5 we compared has nominally 32 voices (against the 16 of the Miracle), but since this figure is based on using only a 1-partial sound, and many on the D5 contain four, this means the D5 can manage only 8 notes at once.

The Miracle has 128 instruments, which cannot be modified; the D5 has 64 non-modifiable sounds, 64 alterable ones, and a further 128 "patches" - combinations of up to two of the existing sounds, in different proportions and with various other bells and whistles.

The D5 can also accept memory cards, each containing another 128 sounds and 128 patches, which is something the Miracle can't manage. The Miracle has a built in amplifier and stereo speakers - the D5 has not, like all other true stage synthesizers. Both can be easily hooked up to home stereos or band amplifiers; neither has any sort of on-board reverb system (to make it sound

like it's in a hall, room or suchlike; a very important feature for realistic pipe organ sounds, amongst other things). As a final hardware comparison, the D5 originally cost more than \$1200 back in 1988 and can now be had (if you can track one down) for around \$800 new; the complete Miracle system costs (very slightly) less than \$700.

#### Software To Learn By

It's the software that really makes the Miracle shine; it's about as good as you can make an educational system. The problem with these systems in the past has always been that the devil has all the best tunes. Everything a parent doesn't much want their kid to do holds a magnetic attraction for them, and all the educational programs (with a few extraordinary exceptions like *Carmen Sandiego* and *Discovery*) possessed all the excitement value of three pounds of cold broccoli. The Miracle system manages to beat this about as well as you could expect anything to.

Learners are led through various games and routines, with continuous

evaluation of their performance, concentration on weak areas and general positive reinforcement, including quite good orchestral accompaniment when the program is satisfied with their ability.

Learners get to shoot birds in a shooting gallery, rescue hapless parachutists, blast aliens and generally muck about whilst they improve their sight-reading, fingering and so forth; an excellent system, magnificently designed and impeccably presented.

The package as it stands now has a couple of minor shortcomings. The available tunes for kids to learn tend heavily towards the classical and extremely pedestrian popular, with rock getting a minimal representation.

No kid wants to show off at a party by playing excerpts from "Carmen"; a few more popular numbers would have been a useful inclusion. According to a coupon included with the box, extra music can be purchased which integrates completely with the software. The Miracle will even teach you new songs. It's just a shame some of these numbers aren't included standard. Mind you, this is a pretty minor caveat - the only real shortcoming of the Miracle is its small keyboard, which is largely made up for by the extremely reasonable price.

#### Conclusions

In summary, this system is not a toy, it is a very real alternative to a costly series of piano lessons and the possible purchase of a piano for the home - even a passable electric piano costs the thick end of \$1000, while an acoustic is \$3000+ for quality; grands are even more costly. Ideal for home or class room use, the software really works. Before too long a raw beginner will be bashing out tunes and learning to read music.

The Miracle works, works well, and deserves serious consideration. It will undoubtedly go down in the annals of Amiga history as a classic of overall design, along with the Amiga 1000 case, Newtek's Video Toaster and *Deluxe Paint*.



# Letters

## PC's Vs Amiga

✉ A recent message in Compuserve reads:- A little caution - Windows actually makes PCs bigger time wasters than a stock PC command line machine! Microsoft... was so intent on locking in business to the *MS Office* and related packages that they made Windows a non-general tool. Most people spend so much time fussing with it that productivity is actually hurt, especially if the windows users are mainly Norton/Borland/Lotus users instead of MSWord, Excel, MS C users.

Another interesting point is that a friend who works for Coopers and Lybrand in New York City ran a two month study between himself and a coworker.

He used an A3000 with Pagestream 2.2, Superbase and SAS C compared to [his coworker on] a '486, Windows 3.0, MS Windows, Excel and Microsoft C. The 3000 user ended up with nearly a 300% better productivity than the '486 Windows user.

Unfortunately, common sense has long since left computer buying at the corporate level. And, most buyers get the same machine as they have at work so they can steal the software. So until the Amiga can break into business in a big way it will not break into homes in a big way, unfortunately. But I too come home frustrated and amazed at how people cling to the technology of yesterday after I spend a day using clones. Shear torture!

Wayne Cole  
76370,621

Ed: Although Australia seems to share similar thinking in some sectors of the community, the Amiga is far more popular for home downunder than over in the U.S. Of course, the comparison in productivity is a valid issue and one which Commodore have failed to address.

## Single Frame Recording

✉ Congratulations on a great magazine - it truly is for the professional Amiga user who is not totally engrossed in games. I have some Amiga video questions - Is it possible to do single frame recording on a Super VHS VCR that is not already single frame capable? It seems to me that it might be done using *Mediaphile* by telling the deck to record from say 01:22:38:09 to 01:22:38:10. Would I need a single frame capable recorder and would it have to be able to read SMPTE?

Your answer would be greatly appreciated as I wish to get a start in Amiga video with the help of an A3000, a 68040 accelerator, a 24-bit card and *Mediaphile*. Finally, could you tell me if there is a professional version of *Mediaphile*?

Ben Kintominas  
Punchbowl

Ed: Although *Mediaphile* is capable of frame accurate control of consumer S-VHS decks, consumer VCR's are not frame accurate, so although the command to record only one frame of animation may be issued, you may indeed get two. The result would be a very strange looking animation. Frame accurate decks

can cost a small fortune, however recently a number of solutions have surfaced which could be the answer to this problem.

Gary Cohen, of Commercial Productions of Australia, has joined forces with a team of Amiga developers. Together they are developing an affordable frame accurate controller for professional decks costing around \$3000-4000. For more information, I suggest you call him on (02) 337 6255. As things progress, we'll bring you a full report on the device and software.

Another solution was mentioned in the October 1991 Amiga World in an article by Louise R. Wallace. He reviewed a single-frame recording system which involved a new US\$6500 deck released by Panasonic called the AG 7750 and Personal SFC (Single Frame Controller and software) at US\$425 from Nucleus Electronics. Various other Panasonic models are supported. Unfortunately, no contact number was proved for the company.

## Singing Our Praises

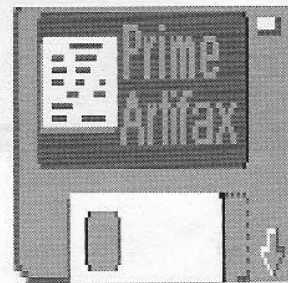
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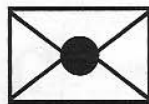
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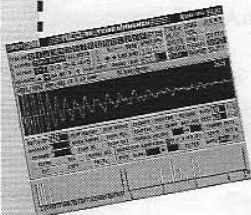
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# Last Word

## Prices Surveillance - Is the computer industry next?

In 1989 the Prices Surveillance Authority held an inquiry into book prices and concluded that Australian book prices were higher than those in the U.K, Canada and the United States. It recommended the repeal of the provision of the Copyright Act 1968 (Cth) that prohibited parallel importation of books except for books of Australian authors published in Australian and 'pirated' copies. Parallel importation is the importation of legitimate copies purchased overseas but not imported with the copyright owner's authorisation.

The Authority believed the repeal of the prohibition against parallel imports would reduce the delay in arrival in Australia of books published overseas and would lower prices. Its recommendations provoked unfavourable comments not only from publishers but also from authors and others in the industry. The Copyright Amendment Bill 1991 was introduced to relax restrictions on book importation.

The Bill gives the publisher 30 days in which to publish the book in Australia if the publisher wishes to retain control over distribution in Australia. Otherwise, booksellers will be free to import legitimate copies without the

publishers consent.

The Bill was finally passed by both Houses of Parliament on 11 November 1991 and the legislation should now be operative.

The Prices Surveillance Authority reached a similar conclusion on sound recordings. It concluded the provisions of the Copyright Act which prohibit the parallel importation of non-pirated records allowed the major record companies to control into Australia, limit competition in the sound recordings market and maintain higher record, tape and CD prices in Australia.

The Authority recommended that similar amendments to those affecting books be made to the copyright Act to cover parallel importation of non-pirate copies of records. The Government is currently considering these recommendations. The question being asked is 'Is the software industry next?'. ■

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## Amiga 2000 Plus

Commodore Australia say that we won't see the Amiga 500 Plus until July this year - around the time of the World

of Commodore Show. However, one Amiga 500 Plus has already turned up unannounced amongst the stock of a local dealer. Could this have been a stray intended for delivery somewhere else, like New Zealand? Whilst the Amiga 500 Plus sounds like a worthwhile improvement over the old A500, it would be more exciting to hear about an Amiga 2000 Plus.

Imagine a machine with 3Mb RAM, SCSI hard disk controller with a 56Mb drive, a flicker fixer, the new Denise and Agnus chips, a Multisync monitor and Workbench 2.04 installed and ready to run. Let's put a price tag on it of around \$2000. Then, let's swap the standard 68000 processor for a 25Mhz 68030 and upgrade the rest of the architecture to full 32 bit.

For that little improvement you could raise the price to \$2500 dollars and compete happily with the '486-DX clones you can now buy for around the same price. Of course, by the time you add all that to a 2000 you're talking about an Amiga 3000. So, maybe Commodore should just drop the price on the sleek 3000, promote the machine to the business world and then slot in an affordable 2000 somewhere in between to take on the 386's - around \$1500 would be a good price point. ■



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